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# Present-Day Gardening

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OF THE *GARDENERS'*  
*CHRONICLE*. . . . .

A LIST OF VOLUMES  
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# Present-Day Gardening

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PLATE I (*Frontispiece*)

L. AURATUM VAR. PLATYPHYLLUM  
(MACRANTHUM)

(See pp. 29, 45.)















# *Lilies*

*By A. Grove*

*With Eight Coloured  
Plates*



*London: J. C. & E. C. Jack  
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## PREFACE

THIRTY years have elapsed since I published a Monograph of the Genus *Lilium*, which has long been out of print, and, as Mr. Grove says, was too much of an *ouvrage de luxe* to be accessible to the general public. Since then considerable numbers of new species and varieties have been discovered, most of them in Western China, and as many of these are but little known and others not yet introduced, Mr. Grove's account of those that are in cultivation will be of great value to present-day gardeners.

Though his studies on the genus have been carried on in a very quiet and unostentatious manner, I can say with truth that neither the late Max Leichtlin nor Mr. G. F. Wilson, the two great Lily growers of the past, knew as much about the cultivation of Lilies as he does ; and, considering the unfavourable conditions of his garden on the chalk hills of Berkshire, the success which he has attained in growing many of the rarer or more delicate species is truly remarkable.

There is no genus of bulbous plants which has proved so difficult to manage in cultivation, or in which so many failures have to be recorded ; and if it was not for annual importations from Japan, America, and the Continent, I fear that most of the Lilies would disappear from the gardens of those who are not prepared to grow them from seed, or to give to them the same care and forethought that Mr. Grove affords them, not only in their growing season, but also whilst they are at rest.

Although the majority of Lilies are hardy enough to



endure a considerable degree of frost when at rest, they come with few exceptions from climates where the summers are longer, warmer, and sunnier than ours, and they will not endure frost when in full growth during May, or such drought in the soil and atmosphere as we often experience in summer. Neither will the bulbs of many of them endure, even in the best drained soils, a continuance of cold rain in autumn without suffering and eventually decaying. And when we look at a map and see that, with one or two exceptions, Lilies are natives of latitudes from 5 to 20 degrees south of England, it is surprising that any one should expect them to survive the changes of our climate for long, even if they were true perennials, which some of them certainly are not.

But, with all these drawbacks, Lilies are so incomparably beautiful, that every one who sees them wishes to grow them ; and this book will do much to convince those who have failed in the past that many of the difficulties are not insuperable, especially for those who are fortunate enough to live on soils free from lime in the southern counties of England.

I have always said that if half the skill and care that is devoted to growing Orchids was given to Lilies under glass, it would be richly repaid ; but since the late Mr. G. F. Wilson's death no one has apparently given much attention to this form of cultivation. Only recently I have found that, by potting them in almost pure oak leaf-mould, such delicate and beautiful Lilies as *L. philippinense* and *L. japonicum*—of which latter species the incorrect garden name *Krameri* seems impossible to get rid of—may be successfully bloomed for two or more seasons in succession, though previously I had never been able to keep them alive. If the peculiarities of each species are studied as carefully



as Mr. Grove has studied them, I have little doubt that we may see a great many more Lilies continue in health and beauty. His directions for raising plants from seed are good, but patience is necessary, for though *L. tenuifolium* is an exception, most Lilies require four to six years to become strong enough to flower, and they cannot be hurried with manure.

Hybridisation has done less for this genus than for many, and, with the exception of *L. testaceum*, I do not know a single genuine hybrid Lily which has ever become common; whilst some of those which have been raised are distinctly inferior to both their parents in beauty, and do not seem to have gained vigour of constitution from crossing, as happens in so many other plants.

I feel certain that if collectors of Lilies in China and Japan would take advantage of the parcel post, and supply small parcels of carefully packed bulbs lifted during the resting season, and sent *via* Siberia, we should avoid a great many of the losses which now occur; but the Japanese, though masters of their art in most respects, fail in many cases to understand the principles of good plant-packing, and if the collectors in America would pay more attention to quality than to quantity, it is probable that they would benefit as much as we should.

With regard to nomenclature, it is evident that until much more is known of the recent discoveries in China, and on the Pacific Coast of North America, the correct names and positions of several species or varieties cannot be settled, and it is to be hoped that Mr. Grove may sooner or later give us a more elaborate work on the subject.

H. J. ELWES.



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# LILIES

## INTRODUCTION

THE family of true Lilies, by which we mean members of the genus *Lilium*, is a comparatively small one, being represented by about seventy known species and nearly twice as many varieties.

Although three countries—China, Japan, and California—provide between them considerably more than half the number known, the genus is distributed over almost the whole of the temperate regions of both hemispheres, and while five species are known in sub-tropical countries, there is no record of any true Lily having been found in the Southern Hemisphere.

Most species actually in cultivation come from Japan, to which country about fifteen are referred ; North America accounts for seventeen, of which the Western States provide the greater number ; in Europe eight species are known ; whilst from the Himalayas there are four, Siberia three, and Burma four.

Though many of them are not yet in cultivation, nineteen species are peculiar to China, most of them hailing from the vast mountainous region in Central and Western China which is such a veritable paradise to the botanist, and the surface of which up to the present seems only to have been scratched as far as the discovery of new



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species of plants is concerned ; therefore we may reasonably expect the number of Lilies emanating from there and Tibet to be increased from time to time.

With the possible exception of *L. Martagon*, no Lily is indigenous to the British Isles, and though the "Madonna" Lily has come to be regarded by the average Englishman as a native plant, it does not seem to have found its way to this country till the early part of the seventeenth century.

The present-day classification of Lilies is due to Mr. J. G. Baker, who divides the species into five sections as follows :—

Martagon. | Isolirion. | Eulirion. | Archelirion. | Cardiocrinum.

and in each section there are Lilies which all but the most enthusiastic cultivators will be well advised to let alone.

Martagon is the largest section and takes in all Lilies which have their blooms much recurved and which are generally known as "Turk's Caps," such as

chalcedonicum. | pardalinum. | pomponium.

as well as a few sorts the flowers of which are not recurved so much, *L. canadense*, for instance.

In the Eulirion group, the flowers are true Lilies, trumpet shaped, with the petals reflexed at the tips, and this section includes such well-known plants as *L. candidum* and *L. Brownii* among others.

In the Archelirion section we find flowers that are as a rule large and more or less open, and *auratum* is a good example of this small sub-genus, all the members of which hail from Japan or China.

Lilies having upright flowers go to form the Isolirion section, and familiar examples of this are the Orange Lily, *. croceum*, and the little Chinese *L. concolor*.



The smallest group, and at the same time the most distinct, is *Cardiocrinum*, consisting of only three species—

*L. giganteum*, *L. cordifolium*, and *L. mirabile*.

A complete list of the species and varieties, with their places in the groups, is given in the Appendix.

## CHAPTER I

### LILIES IN LEGEND, BOOKS, AND HISTORY

“Torn by his father Jupiter from the flowing breast of Alcmena, his earthly mother, and borne through the heavens to the bosom of the goddess Juno, so that, son of a mortal woman, he may be nurtured by Immortal and become himself a god, the boy Hercules, his mouth o’er full of milk, lets fall the drops which form the Milky Way and star the earth with Lilies.”

SUCH is the classical fable of the birth of what must almost certainly be one of the very oldest plants on earth, with its beginnings wrapt in the mists of countless ages; sung of from the days of Solomon onwards, surely no flower can have figured in legend and verse more often than the Lily, and though in the twentieth century we cannot identify the Lilies of the ancients, or even be sure they were true Lilies, there is a great fascination in the idea—by no means far fetched—that the Lily of Scriptural lore and the Madonna Lily of more modern times, to be found at the present day growing wild in Syria and Palestine, are one and the same plant.

Dropping us, as is his wont, from the clouds of mythical licence to more tangible ground, the student of Lily lore will tell us that the literary history of the subject is extensive if somewhat diffuse; but with the exception perhaps



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of Parkinson, who gives the Lily pride of place, and in his quaint way minutely describes a round dozen sorts in the *Paradisus* (1629), we need go no further back than 1774, when, in the *Systema Plantarum*, Linnæus gave a description of nine species.

At that time no Oriental Lilies seem to have been known to Linnæus, and it remained for the travellers Thunberg, about twenty years afterwards, and Siebold, early in the nineteenth century, to publish particulars of species they each found in Japan or elsewhere; between them they more than doubled the number of Lilies on Linnæus' list, and while further species were discovered and recorded from time to time by others, no serious attempt at systematic classification seems to have been made till early Victorian times, when a Belgian, M. Spæe, published a clear and distinct memoir on the genus (1847), which by that time had increased to about forty-four species. Spæe's book remained the standard work of reference on the subject for thirty years.

During the seventies, Lilies had their full share in the increasing interest shown in horticulture generally, and between 1870 and 1880 there was a veritable deluge of literature on the subject, numerous papers, articles, and "Notes" being published in the transactions of various societies or in horticultural journals in England, France, Germany, and America, and while much that was written at that time has since proved to be inaccurate, there remains a mass of information of incalculable use to the grower of Lilies.

In 1874 Mr. Baker published the scientific classification of the genus to which all Lilies are now referred, and which no doubt cleared the way for Mr. H. J. Elwes' critical



Monograph on Lilies (1880), the modern standard work on the subject, but one that is so essentially an *edition de luxe* in the best sense of the term, that it is beyond the reach of the large mass of horticultural folk, for whom, in fact, there was no moderately priced and at the same time really practical and concise book on Lilies till 1905, when Mr. W. Goldring published the *Book of the Lily*, a small volume packed with practical detail obviously the outcome of long and first-hand experience.

As far as their cultivation in the gardens of Great Britain is concerned, the history of Lilies goes no further back than the publication of Parkinson's *Paradisus*, for though they are mentioned often enough before his day, and possibly have been in cultivation as long as gardens have existed, Parkinson was the first to publish such clear descriptions of the sorts he knew as to enable us to identify them.

As was to be expected at that time, the Lilies Parkinson was familiar with, except *L. canadense*, came from the Continent, and it was not till people began to get about the world more that other species were brought from distant shores and put into cultivation in English gardens; the process of discovery, naturally a slow one in those days, was hastened now and again by exceptional "finds" of new species by such men as Thunberg and von Siebold, but with the expansion of travel and the opening up to collectors and botanists of countries which were formerly inaccessible or unexplored, garden Lilies gradually increased in number.

In the middle of the last century a great fillip was given to the interest in these things by the opening up of California, where many plants not previously in cultivation



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were found, among them some of the most beautiful Lilies.

Then the rapid dawn of a new era in Japan, and the very gradual awakening of China, together with the removal of many of the vexatious restrictions to which foreigners had been subjected in both countries, led to the bringing back by travellers from the East of many Lilies, some of which, though already known to botanists through the instrumentality of Thunberg and others, were not in common cultivation.

With the perspicuity natural to their race, the nurserymen of Holland soon saw the commercial possibilities of such of the Lilies of Japan as would stand the climate of Eastern Europe, and commenced the cultivation of them on a large scale, with the result that a new race of Lilies was brought within reach of people to whom Oriental Lilies had up to then been caviare.

Although they had allowed the Dutch nurserymen to steal a march on them in the cultivation and sale of their own Lilies, it did not take the Japanese long after the opening of the treaty ports to realise that in the wild Lilies with which their country was so plentifully besprinkled they had an asset of great commercial value, and the trade in Lily bulbs, which began half a century ago, has gone on year after year with ever-increasing strides.

Of late years our gardens have been enriched by several species from Central and Western China, and gardeners owe a great debt to the handful of men who have risked their lives in the pursuit of new plants in that inhospitable country and Tibet.

No work on Lilies, however small, would be complete without mention of the man who above all others has done



so much to bring within reach of modern gardens many of the beautiful species available to-day.

To the late Max Leichtlin of Baden, cultivators of hardy plants owe a debt far greater than many of them are aware of, and growers of Lilies a great deal more; for though he was not a collector or discoverer of new species in the sense that Thunberg, von Siebold, Regel, Fischer, or Maximowicz were, to mention only a few names out of many, yet his were the hands to which so many collectors sent their finds, sure in the knowledge that if he could not manage the plants no one could do anything with them.

Hence it comes about that so many fine modern Lilies owe their introduction to gardens to that modest and retiring man in whose garden on the hillside at Baden they were cultivated with such sympathetic intelligence and exceptional success.

Leichtlin originally distributed *L. dalmaticum*, which he himself discovered, as well as *L. Washingtonianum*, *L. Humboldtii*, *L. columbianum*, and several other species from the Pacific slopes; *L. sinicum*, *L. longiflorum* var. *Wilsonii*, *L. Hansonii*, *L. tigrinum splendens*, *L. myriophyllum*, *L. philadelphicum* var. *Wansharicum*, and *L. pardalinum* var. *puberulum*.

## CHAPTER II

### GENERAL CULTURE IN GREAT BRITAIN

THE geographical range of Lilies extending from Western Europe through Asia to the Eastern Coast of Northern America, it is not surprising that difficulties are met with in their management in a country where the climatic conditions



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generally are so diverse and so different to those which obtain in the countries whence the majority of Lilies come, but with the exception of the few requiring sub-tropical heat, there seems no reason why any one determined to do so should not succeed in growing nine-tenths of the species out-of-doors, except perhaps in the colder parts of the country.

There are many kinds that present no more difficulty to the intelligent grower than do Daffodils or Tulips ; all it is necessary to do is to procure sound bulbs and plant them under suitable conditions. But no one should attempt the cultivation of the more troublesome sorts without a stout heart, a large stock of patience, and a determination to get to the bottom of the difficulties with which he will be faced from time to time, and which, while sometimes seeming almost invincible, may one by one be overcome, leaving behind them ample reward in the delight with which the patient grower will watch the unfolding of such exquisite blooms as *L. Leichtlinii*, *L. Kelloggii*, *L. rubescens*, or *L. japonicum*, to name only a few of the less well understood but very beautiful sorts.

A cold wet winter following a damp and cheerless summer will inevitably try the patience of the most enthusiastic cultivator ; but when the importance, and indeed the necessity, of sharp drainage is better understood than it seems to be at the present time, the decimating effect of such conditions of weather as not infrequently obtain in Great Britain can be prevented to a great extent, though it is not likely that many of the more delicate kinds would survive if left for long to look after themselves.

As a preliminary to success, it is essential that the would-be Lily grower should obtain really sound bulbs ; it



is not necessary that they should be large or fully grown—indeed, as a rule, young bulbs take more kindly to transplantation than those that are fully grown—but it is essential that the bulbs should be fresh, firm, and not soft or shrivelled: rather than be satisfied with the latter, let the amateur raise his own stock from seed or scales, a by no means difficult process and by far the most satisfactory in every way in the end.

The buying of Lily bulbs of the more difficult sorts, such as are imported from America or Asia, is gambling pure and simple, for only a comparatively small number of such bulbs ever become established in gardens; and when one remembers the treatment the bulbs go through from the time they are taken up by collectors in the Californian woods, or harvested by the growers in Japan, till they reach their final resting-place, the wonder is that any remain to flower and whet the appetite of the enthusiast for more.

Lilies are commonly reported, often prematurely and on insufficient grounds, to succeed in Great Britain in such varying circumstances that no hard-and-fast rule can be laid down, but the opinion may be hazarded that in the cultivation of Lilies success—and by this is meant the permanent establishment of the plants in the garden—with a majority of the species, depends rather more on conditions of moisture and soil than on those of climate; for no Lilies hailing from temperate regions seem to mind heat or cold within ordinary limits; and while many sorts will flourish in a wet summer provided the soil and planting are suitable, not many species apparently can stand a prolonged drought. This may perhaps give the key to the absence of Lilies from tropical countries. At the same time, only the more robust sorts appear to bear successfully with excessive moisture



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when the bulbs are dormant, and one of the principal difficulties confronting the individual who would grow all known temperate species in his garden lies in the fact that few of his bulbs are at rest at the same time. The flowering season of one species coincides with the resting period of another ; so that the cultivator must somehow contrive that bulbs of *L. Washingtonianum*, *L. tenuifolium*, or *L. rubellum*, for instance, which bloom in June, may remain comparatively dry during August and September when the bulbs are at rest, while the many sorts which flower in the autumn may at the same time be receiving the moisture which is so essential to their well-being.

Deep cultivation, a cool subsoil, and thorough drainage will undoubtedly go far to effect the desired object, but perfection will probably never be attained in Great Britain, at any rate away from the southern and western coast-line, without some underground system of irrigation by pipes or other means, so that when it is needed water can be carried well down below the roots of the bulbs. But though moisture or the absence of it is all-important at the proper seasons, it must not be thought that the Lily grower can do altogether without warmth ; for while, as already explained, numerous sorts seem to be more or less independent of it, there are many species that will not expand their flowers properly nor ripen their seeds in a season that is comparatively sunless, and, as far as Great Britain is concerned, comparatively cold. This holds good more especially for some of the Californian and Japanese species, and it must be remembered that the summer in those countries is more or less tropical.

Then, again, the nature of the soil enters largely into the Lily grower's operations, and he who has to deal with a



sandy or gravelly loam such as is found, for instance, in parts of Surrey, Sussex, and Hampshire, has a great advantage over the individual whose gardening operations have to be carried out on clay, marl, or soils of a calcareous or limy nature.

To some Lilies lime is poison, while others seem indifferent to its presence, and, curiously enough, those which flourish on limestone soils are also those which will stand more drought than most species and full exposure to all the sun they get in Great Britain ; for example, *L. candidum*, *L. testaceum*, *L. Martagon*, *L. pomponium*, *L. pyrenaicum*, and *L. monadelphum*.

Many of the more easily grown Lilies thrive in loamy soils that are if anything a trifle on the heavy side, and, generally speaking, it may be said that ground that will grow a good crop of potatoes will do for the more robust Lilies.

• For the more difficult kinds, most of which are so beautiful that every one should at least try to grow them, the ground in most gardens will have to be prepared, and it may be taken that as a rule the object is to produce a soil which, while generally without lime, will always be open and free, never clammy and cold or sour, and at the same time cool in hot weather ; such, in fact, as, while not too sandy, will stand a good deal of treading on when it is wet without binding.

In the making up of lime-free soils the great difficulty one has to contend with is the production of a mixture which will not turn acid in the course of a season, and it is by no means easy to do this, the usual Lily compost of loam, grit, peat, and leaf-mould being in itself useless for many of the more difficult sorts.

No grower of plants can lay down the law for others,



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but in growing difficult Lilies it may be safely said that the balance of failures and successes goes to justify the cultivator who uses fine and coarse grit, wood ashes and charcoal, with a much freer hand than is generally advised, and who, above everything else, attends not only to the provision of water when it is needed, but the getting rid of it when his bulbs are at rest.

### CHAPTER III

#### MANAGEMENT OF CALIFORNIAN LILIES

"Go with me in the Coast Range Mountains to where, high in their bosom, some living stream has formed a little vale deep with sandy loam and wash from the surrounding slopes, and there, overtopping the tall grasses and weeds which are stimulated to a luxurious growth, I will show you the beautiful Panther Lily, higher than a man and glorious in its orange and red bloom, its bulb in a sharp, well-drained soil, its roots running down to abundant moisture. In such spots it grew by acres before civilisation with its plough and pig came along: I have often seen masses containing 200 to 300 bulbs solidly matted together. If it is on the bank of the stream in deep sandy loam where the roots can run down to water it is even happier. It glories in air and sunshine, and where the banks of the streams are shaded, the plant never equals its stature in more open places."

The Panther Lily (*L. pardalinum*), of which Mr. Carl Purdy draws such an alluring word picture, is a plant of the most simple culture, requiring no special care, but many of the other Lilies of California are rather difficult to manage in all but the sunniest parts of Great Britain, and any one



PLATE II  
L. MYRIOPHYLLUM















wishing to succeed permanently with such beautiful plants as *L. Parryi*, *Bolanderi*, *Kelloggii*, *rubescens*, *Washingtonianum*, *maritimum*, and *columbianum* will find it necessary to take more trouble over them than with *pardalinum*, *Humboldtii magnificum*, or others of the more easily managed Lilies. At the same time, all the trouble one can take is amply repaid by the sight, for instance, of a clump of *L. Parryi* in full bloom.

The essentials to success with most of these more difficult species seem to be light and air, a moist subsoil, fairly dry top soil, some protection against cold, and, above all, quick drainage.

Sunlight, and the warmth it brings with it, seems almost life itself to these children of the Pacific coast, but much as they love the sun, he is powerless to keep them in health and strength unless the ground in which they grow is to their liking.

- It may truly be said that while the ground deep down below the bulbs should be moist, the top soil must be open and free of stagnant moisture, the drainage of the bulbs being as sharp as can be.

Plant, therefore, your rarer Californian Lilies, as to aspect, in full sun, and in a kindly loam made very porous with grit and charcoal, and overlying a stiffer and more retentive loam that will hold the moisture to the long roots but not to the bulb.

To make certain of drainage, lay the bulbs on inverted pots, and, that the sun may not parch the ground, let them be planted among dwarf shrubs such as the *Vacciniums*, *Pernettyas*, or *Epimediums*.

Then, provided the bulbs are sound to begin with and you remember to water the ground in a dry summer, they should establish themselves in a year or two, and more than repay all the care the amateur can lavish on them.



## CHAPTER IV

## MANAGEMENT OF JAPANESE LILIES

THOUGH, in common with their sisters of the West, counting among their number some plants of easy culture, several of the Lilies of the East do not readily respond to the blandishments of the grower in Great Britain ; and difficult as are some of the Californian Lilies, there is among the Lilies of Japan one—*L. Leichtlinii*—which, if more lovely than most of the members of a beautiful family, is at the same time of all species in cultivation probably the most wayward and difficult to manage.

The different sorts of Lilies grow in Japan under such varying conditions of climate and situation that no suggestions of a general nature as to their management can be made as in the case of the Californian Lilies, but, broadly speaking, they may be divided into two main groups which for convenience may be called plants of the Woodlands and of the Sun respectively, *L. auratum* being as typical of the former as is *L. elegans* of the latter. A further subdivision would group these again into—(1) Lilies indigenous to Hokkaido and the Main Island of Hondo, and as to the hardiness of which there is no question, since most of them may be frozen without hurt ; and (2) those which are found growing wild in many of the small islands south of Japan between Hondo and Formosa, and which cannot reasonably be expected to be so hardy in English gardens as their more northern sisters.

Assuming that the cultivator has good bulbs to begin with—and if not, failure is certain—the ordinary run of Japanese Lilies is not difficult of culture, the main point to



remember being that as these plants have two sets of roots, one at the base of the bulb as in all Lilies, and another at the foot of the stem immediately above the bulb, they must not be treated in the same fashion as Lilies which root only from the bulb.

It is necessary, then, to plant these bulbs more deeply than many, in order that the stem roots may have a good depth of soil from which to draw the nourishment so necessary to the proper development of the flowers. It is essential that the top soil should be rich though at the same time porous, and good drainage is a *sine qua non* or the bulbs will very likely rot during the resting period.

It is important that Japanese Lilies of every kind be planted among ground-shading shrubs of a height proportionate to the growth of the Lily, so that the earth over the stem-roots may not be baked by the sun.

• Whether they are planted in a position so that the flowers are fully or only partially exposed to the sun, depends not only on the soil but also on the part of the country in which the Lilies are grown, and, one would like to add, on the amount of sunshine and heat to be vouchsafed by Providence during the summer; for while the gardener can supply all their other wants, he cannot give his garden Lilies sunlight and heat when Nature fails him. As, however, where sunshine is concerned, gardeners have to "take it as it comes," one must strive to strike a happy mean, so that whether the English summer is tropical or arctic the Lilies may not suffer over much.

In an exceptionally hot summer the bloom of some of the woodland sorts will almost certainly "flare" rather quickly if fully exposed all day to the sun, and the flowers undoubtedly last a good deal longer in hot summers if the



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Lilies grow in some place which is not exactly shaded but in which the rays of the sun are broken to the blooms. At the same time, in this country, the bulbs in such positions probably do not ripen so well as those in full exposure, and it is certainly easy to overdo the shade.

But so much depends on the position of the garden that every grower should experiment for himself, planting some of the Japanese woodland Lilies in full sun and others in partial shade, making careful observation of the results during successive summers and deducing his own conclusions.

The Lilies which delight in full exposure to the sun are of the Isolirion group, and include the elegans section; for these the top soil should be lighter than for the woodland plants, the same care being taken to shield the ground, as distinct from the bloom, from the direct rays of the sun.

Taking some of the species individually, it may be said that *L. Hansonii*, like many Martagons, will grow almost anywhere, and is at home in limestone or peaty soil; *L. auratum*, *L. speciosum*, *L. tigrinum*, *L. Brownii*, and *L. rubellum* prefer a light, rich, well-drained top-soil overlying a rather stiff, cool loam, and in the author's experience do best in ground that is free from lime—indeed the first three dwindle away in limy ground.

There are many places in Great Britain where *L. auratum* grows and does well in peaty soil, but it is finer still when grown over a rich loam.

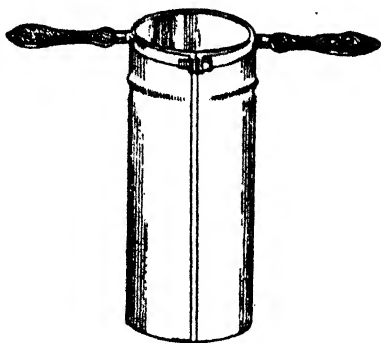
*L. medeoloides*—an exquisite little plant seldom met with in this country—is easily grown in pure leaf-mould, while *L. japonicum*, that rather “miffy” but very beautiful Lily, may be put to bed in a very gravelly loam with the sharpest of sharp drainage.



## CHAPTER V

### THE PLANTING OF LILY BULBS

THE nature of the soil, the aspect and the depth at which the bulbs should be planted, having been dealt with in other parts of this book, it remains to be said that the actual planting of all but the most vigorous sorts is an operation on which it is well to bestow much care. To make a hole in the ground in unprepared soil, put in the bulb and cover it, is with the majority of sorts to court disaster.



AN IMPLEMENT FOR PLANTING  
LILY BULBS

The quickest and at the same time most simple and satisfactory plan of making the holes for the bulbs is to use a cylinder made of light sheet-iron such as would be represented by a piece of ordinary stove-pipe about 18 inches long : fitted with two handles at one end, this implement, the general appearance of which is clearly shown in the illustration, is well within the power of any village smith to fashion.

If the cylinder is grasped by the two handles and forced into the ground with a backwards and forwards rotary motion, it may be withdrawn as soon as the required depth has been reached, leaving behind a clear round hole



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and bringing away a plug of earth which can easily be shaken out.

On the bottom of the hole a handful or two of sand should be placed, and the bulb laid on it : if the latter does not belong to the stem-rooting group, the hole should be filled up with sharp sand well pressed down, a thin covering of earth being put on the top of the sand ; while if the Lily is one of the stem-rooting section, the bulb should be just covered with sand, the hole being then filled with prepared soil.

If this very simple operation is properly carried out, the bulb will be completely surrounded by sand, which provides partial drainage for the bulb as well as some protection against insects ; the sand also keeps the bulbs clean, while it has the great advantage of facilitating their examination should this ever be necessary, for all that has to be done is to take out the sand till the bulb is exposed.

A stake projecting an inch or two above ground, and preferably of metal, because, unlike wood, it does not rot, should be put into the earth immediately behind the bulb, so that in years to come there may be no doubt as to its exact whereabouts.

Different-sized bulbs require holes of different diameters, but three cylinders of 6, 4, and 3 inches respectively serve for all known sorts.

The time to plant bulbs varies according to the species, but as a rule it may be said that planting should begin with the earliest sorts in the first half of September, going on through October and till the end of November, by which time all Lilies should have been put into their permanent quarters.

Many bulbs imported from the East and America do



## PLANTING AMONG SHRUBS 21

not commonly arrive in this country much before Christmas, but with the exception of certain of the more robust sorts, such as *L. tigrinum*, newly imported bulbs should not be planted direct into the garden. The bulbs should always be potted up for the first season, to be turned out of the pots at the proper time, during the succeeding year, when all that have formed good roots may be planted out with every hope of success, the bad bulbs being discarded and those about which there is any doubt potted on again.

If the bulbs are to be obtained from some grower in Great Britain, he should be asked to send them as soon as they can safely be lifted, and care should be taken to see that they are planted at once, and not left about to get dry and shrivelled.

If for any reason, such as delay in the preparation of a bed, the planting of established bulbs has to be deferred till late in the year, the bulbs should be obtained when they are ready to lift and laid on their sides in a trench filled in with sand, which should be damped occasionally so that the bulbs are not allowed to get dry.

## CHAPTER VI

### SHRUBS FOR ASSOCIATION WITH LILIES

It has been explained, in the chapter dealing with the general cultivation of Lilies, that many of the species should be planted among shrubs, so that the ground about the bulbs may not be parched by the sun, and this refers more especially to all Lilies with stem-roots.

Where the collection of Lilies in a garden is large, it is by no means easy to find sufficient shrubs of a suitable



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character to go round, especially as evergreens should be used if Lilies are to have that slight protection from late frosts which is of great importance to many of them. Such difficulties as there are in selecting the shrubs are increased by the fact that many of the most suitable ground-shading shrubs are lime-haters, and can therefore only be used for certain Lilies.

Of evergreens that flourish in soils containing lime, *Veronica Traversii*, the Skimmias, *Olearia Haastii*, *Berberis Knightii*, *B. dulcis* and *B. aquilegifolium*; several of the Cistus family, Garrya and Osmanthus, are excellent for sheltering the taller-growing limestone Lilies, such as *Henryi*, *candidum*, *monadelphum*, *dalmaticum*, *Humboldtii*, and *testaceum*; while *Rhododendron racemosum*, *Mitraria coccinea*, *Olearia nummularifolia*, *Berberis dulcis nana*, *Daphne Cneorum* and *D. fioniana*, many of the Hypericums and several of the Epimediums and Pernettyas, Lavender, both French and English, cannot be improved upon as ground shelter for Lilies of medium growth that do not mind lime, such as *Martagon* and *M. album*, *Hansonii*, *pomponium*, *croceum*, *umbellatum*, *carniolicum*, *chalcedonicum*, *pyrenaicum*, *sutchuenense*, *myriophyllum*, *longiflorum*, and *bulbiferum*.

For the dwarfer Lilies, such as *tenuifolium*, *elegans*, "Golden Gleam," and *concolor*, *Veronica Armstrongii*, *V. Hectorii*, *V. Bidwellii*, and *V. cupressoides*, and *Azara microphylla* answer admirably.

Coming to the host of woodland Lilies, we can use the larger Rhododendrons as protection for the tall-growing *L. auratum*, *L. superbum*, *L. pardalinum*, and *L. Henryi*—for *L. Henryi* grows well in woodland or limestone soil—taking care not to let the Rhododendrons smother



## RAISING LILIES FROM SEED 23

the Lilies in course of years, as they will if not kept down.

*Rhododendron hirsutum*, *Gaultheria Shallon*, *G. nummularioides*, *Azalea amœna* and the variety *alba*; *Kalmia glauca*, *K. nana*, and *K. angustifolia*, *Ledum latifolium* and *palustre*, *Pieris japonica*, and one or two of the *Vacciniums* are suitable for *L. Parryi*, *L. Grayi*, *L. Washingtonianum*, *L. speciosum*, *L. rubescens*, *L. Roezlii*, *L. rubellum*, *L. parvum*, *L. Leichtlinii*, *L. japonicum*, *L. columbianum*, *L. Brownii*, *L. canadense*, *L. Batemanniæ* and *L. Maximowiczii*; while for the dwarf and slender Lilies of the East and West, such as *L. medeoloides*, *L. maritimum*, *L. Kelloggii*, *L. Bolanderi*, and *L. Catesbæi*, we can use miniature shrubs such as *Mitchella repens*, *Azalea serpyllifolia*, *Gaultheria tricophylla*, *G. procumbens*, the tiny *Azalea procumbens*, *Pachystima Myrsinites*, *P. Canbyi*, *Andromeda fastigiata*, *A. tetragona*, *Polygonum vacciniifolium*, *Bruckenthalia*, *Epigæa repens*, *Ardisia*, and several species of *Erica*.

## CHAPTER VII

### RAISING LILIES FROM SEED

WHILE popularly supposed to be an operation shrouded in mystery and involving considerable difficulty, the raising of Lilies from seed is in reality a very simple matter, often indeed child's play compared to the difficulty of procuring seeds of some rare sorts.

All Lilies without exception can be raised either from seed or by scale propagation. Having obtained the seed, all that is necessary is to sow it, as soon as possible after it is



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ripe, either in pans if of a rare species, or in the case of commoner sorts in prepared beds in the garden.

If sown in pans, the seed may be just covered with a layer of sand, and care should be taken that the pans are never allowed to get either bone dry or soddened with wet, for either extreme is fatal to success. It is a good plan to plunge the pans in sea sand, as that material holds the moisture better than ashes and it does not harbour any insects worth bothering about.

Heat is not necessary for the raising of Lily seedlings, except of the sub-tropical sorts, and a cold frame or house supplies all the protection required, frost and the direct rays of the sun being of course excluded.

The seed of some sorts germinates more slowly than others, and in some cases will remain dormant for three years, but if it does not show during the first year the seed should be examined in case it has "gone off," and if plump should be left alone.

At the end of the first year's growth it will be necessary to give the seedlings more room, and this can be done in the case of the rarer Lilies by planting them again in pans for the second season, spacing the tiny bulbs about an inch apart; at the end of that time they should be strong enough to fend for themselves and may be put out in rows in a nursery bed of light, free soil, which should have some protection not only from cold but also from excessive rain, for alternations of wet with severe frosty weather may cause considerable mortality if the seedlings are unprotected. Seed of the more robust sorts, such as *L. Henryi*, *L. monadelphum*, and *L. dalmaticum*, for instance, may be sown in beds in the open, and protected from heavy rains so that the seeds may not be washed out.

Propagation by scales is very simple, and this method



PLATE III

L. SPECIOSUM VAR. KRAETZERI

(See pp. 31, 70.)















has the advantage of being quicker than when seed is used ; the scales are sown in pans in the same way as seeds, but rather deeper and with more sand over them. If things go right, the scales, like the seedlings, should be turned out of the pans at the end of the season, and it will be found that there is a small bulb, rather larger than a seedling, attached to most of them.

Some of the Japanese sorts, such as *L. auratum*, seeds of which it is not always easy to obtain, are easily raised in this fashion, and all the Western American Lilies come readily from scales.

## CHAPTER VIII

### HYBRID LILIES AND VARIETIES

THE number of Lilies known to be hybrids is not large, and few of them are equal to either of the parents used in producing the cross.

Of hybrid Lilies as to the beauty of which there can be no question, *L. Parkmannii*, the *auratum-speciosum* cross and no doubt the finest of all, was at one time more or less common in America, but is not now known to be in cultivation.

Every one is familiar with *L. testaceum* and knows that it is reputed to be a cross between the Madonna Lily and *L. chalcedonicum* ; indeed from time to time there are rumours that the plant has been successfully reproduced by crossing these Lilies, and probably nothing but a certain latent objection on the part of *L. candidum* to setting seed when fertilised by *L. chalcedonicum* and others has stood in the way of the production *de novo* of this Lily over and over again.

The exquisite little Lily from a cross between *L. Martagon album* and *L. tenuifolium* called "Golden Gleam,"



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which was raised by Mr. Huftelen and has lately made its appearance in this country, may be described as a vigorous-growing *tenuifolium* with apricot-coloured blooms ; it is an undoubted acquisition to our list of good Lilies, and that is more than can truthfully be said of the many *Hansonii* hybrids, all of which may surely be charitably consigned to the rubbish-heap.

*L. Burbankii*, a reputed cross between *L. Washingtonianum* and *L. pardalinum*, has none of the good points of either parent, but an unnamed hybrid between *L. Humboldtii* and *L. pardalinum* has proved a magnificent plant, exceeding both parents in the vigour of its growth.

*L. Kewense*, a fine cross between *L. Brownii* var. *chloraster* and *L. Henryi*, has never been common and is all but lost to cultivation, though possibly it can be reproduced ; in this instance the influence of *L. Brownii* is not very evident, except perhaps in the cream-coloured petals of the flower, which takes the shape of *L. auratum* rather than that of either parent.

At the Lily Conference in 1901 a hybrid between *L. Parryi* and *L. pardalinum* was shown in flower by the raiser, Mr. Snow Whall.

With their origin wrapt in mystery, it is difficult to say anything definite of the several Japanese Lilies which, to the observant eye, savour of mixed blood. All we can say of *L. Maximowiczii*, for instance, is that it must surely be the result of the mating of *L. Leichlinii* with *L. tigrinum*, and yet every endeavour made by the author to cross these two species has so far failed.

Then, again, that fine and vigorous plant *L. sutchuenense* bears obvious traces of a near relationship to *L. tigrinum*, and one would think that the union of the tiny Chinese



*L. concolor* with the Tiger Lily must have been responsible for the birth of *L. Wallacei*.

It will be noticed that hybrid Lilies—with the exception of the *Hansonii* set—do not generally produce seed, so that their increase has to be carried on by scale-propagation. If seed were available it would hardly be likely to come true.

Of natural varieties and garden forms of Lilies there is seemingly no end, but a distinction should be drawn between them, because while many of the varieties of nursery or garden origin are but poor things, all but a few of the geographical varieties of species that are found in Nature are worth a place in gardens.

The varieties of *L. Brownii*, for instance—chloraster and leucanthum—are quite as fine as the type, while the same may be said of auratum macranthum or platyphyllum (see *Frontispiece*), a plant that many prefer to the type.

• *L. longiflorum* has many beautiful forms, and one in particular in the plant that was sent to this country some years ago as *L. longiflorum* var. *formosanum*.

There are probably more wild forms of the Panther Lily than of any other, and one of them, *L. Roezlii*, which Mr. Carl Purdy considers a true bog Lily, is so different that it might almost be considered a distinct species. Fine named forms of the Panther Lily are *Johnsonii*, *californicum*, *Michauxii*, *Bourgæi*, and *angustifolium*; *Warei*, which Mr. Purdy describes as a clear yellow, unspotted, fragrant variety and a transitional form between *L. pardalinum* and *L. Parryi*, seems to be lost to cultivation.

Of the Madonna Lily there are two or three good varieties, the best being the black-stemmed peregrinum, while another form, *aureo-marginatum*, in which the leaves have golden edges, is not often seen.



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Other European Lilies having geographical varieties are *L. chalcedonicum*, a vigorous, tall-growing form of which is *maculatum*, while *L. Heldreichii* is considered by Baker as intermediate between *L. chalcedonicum* and *L. carniolicum*. *L. Martagon* has the variety *dalmaticum*, one of the most stately and vigorous Lilies, of which the form *Cattaniæ* is an instance of colour variation. *L. monadelphum*, a noble plant, varies a great deal, while *Chaixii* is a diminutive and not very attractive form of the Orange Lily, *L. croceum*.

Of Californian Lilies besides *L. pardalinum*, already referred to, *L. Humboldtii* gives us two local varieties, both from Southern California, *magnificum* and *Bloomerianum*, the latter a dwarf form, peculiar in having stem-roots. *L. parvum* has an exquisite variety in *luteum*.

The beautiful Washington Lily from the Sierras (*L. Washingtonianum*) has two varieties in *purpureum* and *rubescens*, both of which are distinct and quite as beautiful as the type.

Reverting to the Lilies of the East, we find in *coridion* a yellow form of the tiny Chinese *L. concolor*, while *pulchellum* is a local form of the same Lily.

*L. Glehnii* is a poor variety of *L. cordifolium*; while *L. odorum* and *L. Alexandræ* are both ranked at Kew as forms of *L. japonicum*.

*L. tigrinum Fortunei* is a variety of the common Tiger Lily, and when the two are grown together this variety is generally preferred to the type.

In what may be termed the artificial production of varieties the Japanese seem pre-eminent, and one must admit ungrudgingly that, as a rule, the results of their efforts are quite beautiful.

Take, for instance, the many Japanese varieties of *L.*



*speciosum*, such as *Kraetzeri* and *macranthum* out of many ; or of *L. auratum*, and the beautiful *rubro-vittatum*—surely a hybrid—and think how much duller our Lily gardens and greenhouses would be without them.

Then in the *Elegans* section, in the “improving” of which the Dutch nurserymen as well as the Japanese have had a hand, the named varieties are legion, taking up an undue share of room in the bulb catalogues, for it is open to question if more than two or three are worth growing.

*L. umbellatum*, too, itself probably of hybrid origin, has had quite a number of varieties grafted on to it, chief among them being the blood-coloured incomparable, a difficult plant to manage but a beautiful flower.

Some other Lilies which have had their origin in gardens are the double Tiger Lily, the double white Martagon, *L. longiflorum* var. *Wilsonii*, the White Lily with striped bloom (*L. candidum* var. *striatum*), and the four fine varieties of *L. pardalinum*, namely, *luteum*, “Defiance,” “Glow,” and “Red Giant.”

## CHAPTER IX

### LILIES IN POTS

ALL Lilies may be grown in pots except those which have stems that wander about underground before pushing through the crust of the earth, such as *L. Leichtlinii*, *L. sutchuenense*, and *L. neilgherrense*.

Ordinary flower-pots will do for some of the more robust kinds, but as all Lilies appreciate plenty of room for their roots, it is best to make use of the extra deep



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pots which are now provided for Lily culture by many makers.

Drainage is most conveniently provided by a layer of granite chippings or clean sifted gravel ; and as to soil, the usual compost of sweet loam, sifted leaf-mould, and sand seems to answer well enough for most kinds, the addition of a proportion of finely crushed charcoal being of great benefit.

With the little Japanese Lily, *L. medeoloides*, the Himalayan *Wallichianum*, and the Burmese *L. nepalense*, pure oak leaf-mould, with a pinch of charcoal, is the most satisfactory compost.

The larger stem-rooting Lilies grow better if planted in pots a foot deep, and if the contents of a spent hotbed are mixed with the soil on the top of the bulb the growth will be all the more vigorous.

After the bulbs have been potted up, the pots should, be plunged in sand in a frame or under a wall, care being taken that, while the sand round the pots is always moist during growth, excessive rains are kept off.

As time goes on and the stems push through the soil, water should be increased, and later, when the buds begin to form, the pots should be screened from the direct rays of the sun or moved into some place in the garden where they may be shielded by overhanging branches of trees, or by shrubs.

As a general rule strong-growing Lilies seem to do better when potted singly, but the smaller species such as *L. tenuifolium*, *L. concolor*, and *L. elegans* may be nested five or six together in a 10-inch pot ; for these particular Lilies shallower pots are satisfactory, and it is not necessary to screen them from the sun provided the pots are kept well moistened.



If large, deep pots are employed for the stronger-growing sorts, the bulbs may be used again and again for the purpose, care being taken when repotting to remove all offsets from the bulb or stem.

In potting imported bulbs as to the soundness of which there is any doubt, powdered charcoal should be dusted about the base and between the loose outside scales of the bulb, as this tends to stop the decay of the scales which is so common with many sorts, though it does not arrest any fungal disease that may be present.

## CHAPTER X

### HALF-HARDY AND SUB-TROPICAL LILIES

THE really tender Lilies are few in number and, as far as they are known at present, all belong to the group of Eulirions or true Lilies. Now and again some of them are said to grow in specially sheltered gardens in a very warm part of this country, but as a general rule they will disappear during the first winter after flowering, and the fact that when planted out they flower late in the season when the nights are cold and damp, renders their cultivation in an ordinary garden quite out of the question.

**L. Lowii.**—Though importations are made from time to time from Burma, this is still an uncommon Lily. The flowers, as a rule, two or three in number, are unlike those of any other Lily, being short, widely funnelled, and almost bell-shaped, while their pendulous habit is characteristic more of some of the Fritillaries than any other true Lily. The ground colour of the flower is an ivory-white, as a rule thickly speckled with claret spots.



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Henry found *L. Lowii* in Yunnan, and described it as having pinkish-coloured flowers with darker spots of the same hue, so, like many others, it is evidently a variable Lily. It should be grown under glass in pots of pure leaf-mould.

Baker considers that *L. Lowii* and *L. Bakerianum* cannot properly be kept distinct from each other.

**L. neilgherrense.**—As far as is known, this is the only Lily indigenous to the South of India, where it has its home in the Nilghiri Hills, south of Mysore ; it is distinguished by the extraordinary length of the flower, and *L. longiflorum* would surely never have received that name had its discoverer been aware of the existence of *L. neilgherrense* with the beautiful, white-funnelled flower as much as a foot in length.

No attempt should be made to grow *L. neilgherrense* in pots, because, like *L. Leichtlinii*, the stem wanders about under the ground before making an appearance and needs plenty of room ; it may be successfully grown in a bed of moist but well-drained, sweet leaf-mould in a house.

**L. nepalense.**—This is a wild Lily of the Central and Western Himalayas, growing at 6000–9000 feet, and distinct from the other trumpet Lilies of Northern India in the pendant character of the flowers.

As grown in temperate houses in this country the Lily is not so beautiful as many, and the distinct suspicion of green in the yellow of the flower, and which one may notice sometimes in certain of the Narcissi, somehow conveys the impression that the plant needs more sun to develop the true colours.

Dr. Henry has reported *L. nepalense* as a common plant in the neighbourhood of Mengtse, close to the Tonkin



frontier, and he has observed that it varies considerably—as indeed do most Lilies—in the colour of the markings, which in the Lily found in Nepal are usually a reddish-purple.

Like *L. Wallichianum* it may be grown in pots in a sweet leaf-mould.

**L. philippinense.**—This graceful species is slender of growth, and has a long, very funnelled, semi-erect trumpet, white as snow and borne on a dwarf stem hardly thicker than a twig, and clothed with peculiarly long, grassy foliage ; it is a capricious plant and best grown in pots.

**L. sulphureum** and **L. Wallichianum.**—Refer to pp. 102–105.

## CHAPTER XI

### DISEASES

OF all the foes for which he has any respect, the Lily gardener will certainly place the dreaded fungus *Botrytis cinerea* an easy first ; and not without reason, for it is an insidious disease, coming into the garden like a thief in the night and, if not immediately taken in hand, making short work of his treasures.

Though liable to make its appearance at any time in the season, the disease more often comes when spring is giving place to summer, taking the form of small, whitish-grey patches which form on the foliage and quickly spread till the leaves hang limp and lifeless, while the stems, buds, and flowers take infection and collapse in due course.

That prevention is better than cure was never more true than in this case, and the spraying of all Lilies from time to time with Bordeaux mixture is recommended by experts as helping to ward off the evil. But this is an operation



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involving a great deal of time and trouble ; no wonder that the Lily gardener usually postpones it till there is evidence of the disease, especially as, unless the *Botrytis* has gained a firm hold in the garden, there are seasons when it may not make its appearance at all. This peculiarity is one of the most puzzling points in the investigation of the disease.

At the first sign of the malady the plants attacked should be sprayed with a solution of 1 oz. of sulphide of potassium to 2½ gallons of water, the dose being repeated daily, and all uninfected Lilies near by should be sprayed with Bordeaux mixture or Evans' Aseptic Solution. If the disease gains ground notwithstanding the spraying, the proper course to pursue—if an heroic one—is to cut down the affected Lilies and burn every scrap.

*Botrytis cinerea* is often referred to as the "white Lily disease" as if it was peculiar to that species, the reason no doubt being that as this Lily is more commonly grown in Great Britain than other sorts, the disease is more noticeable on it. The large and evergreen leaves of *L. candidum* offer far more surface for the spores than do those of other kinds except the *Cardiocrinums*, but the *Botrytis* attacks all Lilies without exception ; it is a disease far more of foliage than of bulbs, though if diseased Lilies are neglected the *Botrytis* will eventually find its way to the bulb.

The disease will be found also on Lettuces, Funkias, broad-leaved Saxifrages, Solomon's Seal, and other plants, and though common enough may remain unsuspected till it makes its dreaded appearance among the Lilies. If plants that are affected are not either cured of the disease or cut down, the spores will fall to the ground and remain there ready to come forth at the first favourable opportunity and work further destruction unless the ground is sterilised.



**Japanese Lily Disease.**—Bulbs of Lilies imported from Japan suffer from fungus diseases from which other species seem exempt, the diseases being due to causes that have come into operation before the bulbs are exported from Japan, such as over cultivation and the presence of disease in the Lily nurseries. It is well known that a large proportion of Japanese bulbs are so diseased when received in this country as to be useless, and unless the Japanese growers deal with the problem in a drastic way, they will kill the goose that lays the golden eggs, for the time cannot be far distant when it will be difficult to obtain Japanese bulbs free of disease.

The fungus disease usually met with in Japanese bulbs is that known as *Rhizopus necans*, and generally takes the form of an insidious rotting of the scales from the root inwards ; it is by no means an uncommon thing to find an imported bulb of *L. auratum*, for instance, in which the heart has almost gone, though at first glance the bulb looks sound enough.

Another fertile source of mortality in Japanese Lilies is the root mite, with battalions of which so many bulbs are infested when they reach this country.

The opinion has been expressed that root mites are not the primary cause of the decay of the bulb on which they are found ; but experiments which the author is making seem to show that this contention can hardly be made good, for root mites transferred from newly-imported Japanese bulbs to healthy acclimatised bulbs will gradually eat them away.

While bulbs coming from Japan are subject to a fungus disease of a definite and well-known character, those sent here from the Western States of North America are often found on arrival to be affected by a peculiar form of decay,



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commonly known as "soft rot," in which the part of the bulb affected is found to be of the consistency of cream cheese.

It is probable that this condition is due more to causes connected with the storing, manner of packing, and shipment of "wild" bulbs of delicate plants such as *L. Parryi*, *L. Washingtonianum*, and *L. Kelloggii*, than to any definite disease such as the cultivated bulbs of Japan suffer from ; for while, on the one hand, the comparatively small number of bulbs exported from California is almost entirely gathered in the native haunts of the Lilies and despatched to Europe, collected Japanese bulbs, on the other hand, are always grown on for one or two seasons in nurseries where Lilies have been cultivated in great quantities for many years.

It cannot be too strongly insisted upon that no imported bulbs, as to the condition of which there is the slightest doubt, should ever be planted in the garden when first received : rather should they be potted up for a season, for then, if there is any latent disease or decay, the bulbs will stand a much better chance of recovery than if planted out after their long journey in soil which at that time of year is necessarily cold and damp. At the end of the season the bulbs can be turned out of the pots, and if their condition warrants it they can be planted out in the garden.<sup>1</sup>

The best preventive of the fungous diseases and other troubles to which so many imported bulbs are liable is to be found in the raising in this country of a healthy stock of plants from seed.

<sup>1</sup> It may be stated that, according to Dr. M. C. Cooke, imported bulbs from Japan known to be affected with *Rhizopus necans* have been treated here by submerging them for twenty minutes in a 1 per cent. solution of salicylic acid, thoroughly drying them afterwards. This treatment has killed all the spores of the fungus which the liquid actually reached.—ED.



## CHAPTER XII

## INSECTS AND PESTS

A SLUG-FREE garden seems beyond the dream of man, and all he can do, beyond putting wire cages round the most precious plants, is to be always on the look-out for slugs, reducing the numbers by using lime and lime-water freely in the beds in which Lilies are planted that do not mind lime.

Slugs seem to have a critical taste in Lilies and will often feast on the rare *L. Leichtlinii*, for instance, while leaving the coarser *L. croceum* and *L. umbellatum* untouched. The grey slug is seldom found on the bulb, seeming to prefer the stem and leaves, but the small, black-backed, yellow-bellied variety evidently has a partiality for the bulbs, and may often be found in scores feeding on the scales.

Not far behind the slug in power of damage comes the wire-worm and his larger dusky prototype the "thousand legs," while the cohort of woodlice brings up the rear. For these foes, which work unseen below ground, none of the poisonous gas producing compounds such as vaporite and bi-sulphide of carbon are of permanent value, because their effect is transient, but a great deal can be done by taking care to see that when the bulbs are planted they are thoroughly surrounded by fine sand.

It may be said without fear of contradiction that good cultivation is the surest safeguard against all underground pests except slugs, for it is generally in the rotting scales of unhealthy bulbs that they are to be found, and strong healthy bulbs seem to have little attraction for them.

This is more than can be said for mice and voles, which, having once found an entrance into a bed of Lilies,



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may cause endless damage, tunnelling their way out of sight from bulb to bulb, and feasting as they go till there is literally nothing left, and leaving no sign of their presence except a tiny hole or two, so small as to escape the eye of all but the most vigilant.

Like the slugs, mice seem to exercise a critical taste, leaving bulbs of *L. pardalinum*, *L. superbum*, and *L. Martagon* severely alone, while making short work of *L. auratum*, *L. speciosum*, *L. rubellum*, *L. tigrinum*, and the edible Lilies of Japan generally.

A favourite sphere of operations for these destructive rodents is a bed which has been covered with bracken, leaves, or some protection of that kind against frost ; under these coverings they carry on their deadly work all unseen, and the author has known the removal in spring of the covering from such a bed reveal a heartrending destruction of valuable bulbs.

Mice may be dealt with by traps, poison, and virus, and of the three remedies virus is probably most effective. It is certainly the most convenient, although rather expensive, as when a tin is once opened its contents have to be used directly.

## CHAPTER XIII

### EASILY-GROWN LILIES

UNDER this heading are included a number of Lilies the cultivation of which, as a rule, presents no particular difficulty to intelligent persons. This does not mean that no special preparations are necessary for their successful culture, for it cannot truthfully be said of any Lily, except perhaps *L. Martagon*, that it will grow almost anywhere the seed happens to fall.

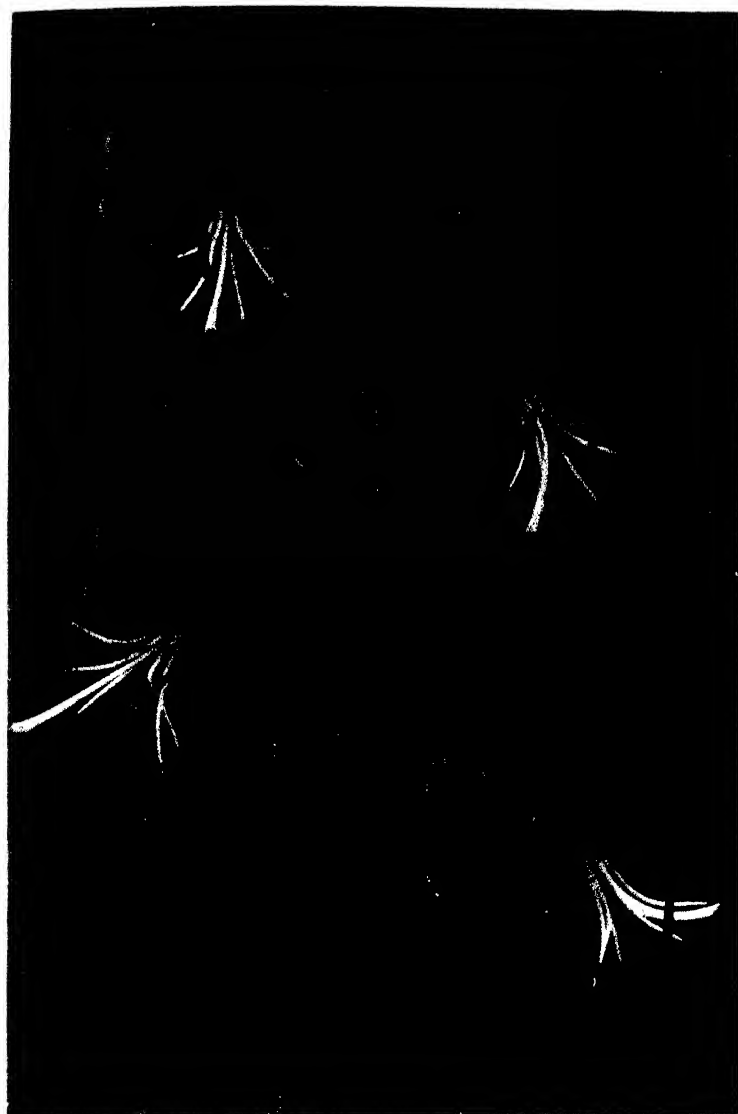


PLATE IV  
L. MAXIMOWICZII  
(See pp. 28, 97.)















Objection may be taken to the inclusion, even in a general way, of any particular Lily as of easy or difficult culture, for it is unquestionably the fact that Lilies which metaphorically are looked upon as weeds in one garden are grown with difficulty in another in the same neighbourhood ; but in the author's experience this usually resolves itself into a question of intelligent cultivation. The following notes may be of some slight assistance in throwing light on the cause of failures with some Lilies.

That little-known Lilies such as *L. medeoloides*, *L. myriophyllum*, and *L. sutchuenense* should figure in company with what are euphemistically known as the commoner sorts, is probably due more to the fact that the bulbs are not readily obtainable than to any inherent difficulty in their management.

*L. auratum*, the Yama Juri or Hill Lily of Japan, is without doubt the Queen of all Lilies. Though known for centuries in Japan, it is not at all an old plant in English or European gardens, for it was unknown here not much more than fifty years ago. As a matter of fact, Lindley seems to have been the first European to publish a description of the Lily, and an attempt by von Siebold to introduce it into Europe having failed, the honour and glory of distributing it rests with Messrs. Jas. Veitch & Sons, to whom is due the introduction of so many fine plants from every corner of the earth.

Most of us are familiar with the pictures which in some form or other reach this country from Japan, and in nearly every one of which there is a view of snow-capped Fusi-Yama ; and it is on the slopes of that mountain that *L. auratum* grew wild and untouched in all the glory of its beauty before the Japanese discovered, soon after the treaty ports were thrown open to commerce, that to



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tear the bulbs up in cartloads and to ship them to foreign countries was to reap a golden harvest.

There it grew in countless thousands in porous open soil, largely composed of volcanic detritus overlaid by the deep carpet of woodland soil so dear to all stem-rooting Lilies.

Not a woodland plant in the sense that it grows in the thick of the forests, *L. auratum* flourishes on the fringes of the woods, in glades and clearings, always amongst vegetation, which, while screening the lower part of the stem and keeping the ground cool, leaves the sun free to play on the blooms.

In this country it is useless to expect either the tropical summer heat, or the dry, bright weather of the Japanese winter, and *L. auratum* must either bear with what Nature gives it in the way of climate or go under ; to our sorrow, it must be confessed that as often as not it chooses the latter alternative.

The English grower however, powerless as to climate, can do a great deal towards easing the lot of this Lily by attending to the cultivation. He cannot give it the porous volcanic soil of Fusi-Yama and other haunts of *L. auratum*, but he can manage something akin to the woodland soil which overlays the other in Japan, and he will find a sub-soil of a rather strong, well-drained, sandy loam an excellent substitute for the broken-down earthy lava of the Lily's native hills ; while if, in addition, he makes the drainage of the bulb as sharp as he knows how, all will go well with his Lilies, provided—and this is of all things important—the bulbs are sound : and that is where the rub comes in, for things have now reached such a pitch that it is almost the exception and not the rule to find imported Japanese bulbs in which the spores of the fatal fungus *Rhizopus necans* are not lurking somewhere, ready to break out into active



## VARIETIES OF *L. AURATUM* 45

growth the moment the bulb is taken out of the clay envelope in which it is packed for export.

But let the grower take heart, pot up his imported bulbs for the first season, and by removing any flower-buds as soon as they appear, throw the energy of the plant into the formation of basal roots ; though in so doing he may deprive himself of the pleasure of gazing on the flowers the Lilies would have brought forth, he takes comfort in the knowledge that in the following season he will have a fair proportion of well-rooted bulbs which will have thrown off the attacks of the fungus and may be planted out in the garden with every hope of joys to come.

*L. auratum* has several varieties, and nearly all are worth taking trouble over. Foremost among them all, and head and shoulders above the type, stands *macranthum*, or *platyphyllum* as the bulb merchants persist in calling it, a gorgeous thing, and a veritable peacock among Lilies.

• A native of the group of islands south of the peninsula of Idzu, *auratum macranthum* (see *Frontispiece*) was originally sent out not so very many years ago by the Messrs. Veitch, and though at first looked upon as a distinct species, it was considered by Mr. Makino as a variety and was described by him in the *Icones Floræ Japonicæ* (1902) under the name *L. auratum Hamaonum*, Makino.

In the form *rubro-vittatum* the flower is quite distinct from other varieties, crimson and not gold being the predominant colour, while the plant is far less robust than *L. auratum* or *L. a. macranthum*, and has a comparatively small bulb ; it may be grown under the same conditions as those two varieties, but is less simple to manage, and possibly ought not to figure in company with easily-grown Lilies.

The structure of the bulb and the appearance of the Lily lead one to think it may be a hybrid between *L. auratum*



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and *L. speciosum*, and the fact that it is propagated from scales by Japanese growers lends additional colour to that supposition.

Wittei or virginale is a very lovely form in which the gold of macranthum largely gives place to white ; it is no easier to manage than rubro-vittatum. Pictum is a variety no one need concern himself about who can grow rubro-vittatum, and tricolor does not appear to be in cultivation.

Though under favourable conditions auratum and macranthum ripen seed in parts of Great Britain, the seed does not always germinate during the first season and propagation by scales affords a more satisfactory and more certain method.

In certain parts of Great Britain, as, for instance, in some gardens near the southern or western coast-line, where the climatic and other conditions happen to suit it, *L. auratum*, once established, will flourish and become more or less perennial ; but, generally speaking, it cannot be looked upon as a Lily that may be left to fight its own battle like *L. monadelphum* or *L. dalmaticum*.

The bulbs may be planted about a foot deep, never in soil containing lime, and they should be mulched every year.

*L. bulbiferum*, from the Grisons, is one of the upright-flowering Lilies, and though known to Parkinson and long in cultivation, is not very common, probably because there is nothing particularly interesting or beautiful about it ; it is doing the plant no injustice to say that it is rather a coarse-growing thing, not unlike *L. umbellatum*—of which it may be a parent—3 to 4 feet high, with clustering terminal umbels of its large flaring cups.

The Lily has a multitude of bulbils all the way up the stem in the axils of the leaves ; the cultivation is simple and is the same as for *L. croceum*.



**L. canadense** is a common Lily throughout the Eastern States of North America as well as a time-honoured member of the genus, for it is one of the nine species described by Linnaeus.

Always a graceful Lily, it may be seen at its best in a loose, moist, vegetable soil in some corner where it gets a little relief from the burning rays of the midsummer sun, and though usually about  $3\frac{1}{2}$  feet high, will grow upwards of five when in comfortable quarters.

The bulbs are rhizomatous and, like those of *L. superbum* and *L. Grayi*, are annual, the new bulb forming at the end of a short creeping rootstock, and sometimes taking a year or two to develop into flowering size; for that reason one cannot depend on either of these three Lilies to flower every year. The bulbs may be planted 4 or 5 inches deep, with a handful of peat under each.

The flowers show a good deal of variation from the orange-yellow of the typical plant, so much so that two of them have been blessed with distinctive names, *flavum*, yellow, and *rubrum*, a deep red; the latter is often sent out by dealers as *L. Grayi*, and though the two are quite different in flower, it would be a difficult matter to separate a parcel of mixed bulbs.

*L. canadense* ripens seed in hot summers, and this generally germinates the second season, growing on afterwards none too quickly.

**L. candidum** (see Plate VI).—The Madonna Lily is a very ancient plant, possibly the oldest Lily in existence, and certainly more generally grown in Great Britain than any other; it is a native of Southern Europe, Turkey, Caucasus, Palestine, and Northern Syria, while it has recently been reported as growing wild on limestone formation in Albania.



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It will grow and flower in dry and hungry calcareous places where the ground is full of tree roots, as, for instance, among *Hypericum Moserianum* under a Cedar of Lebanon, but is usually seen at its best in a rather stiff loam in full sun.

Old clumps of this Lily may often be seen in which the bulbs are matted together in a solid mass, many of them half out of the ground, exposed to sun, wind, frost, and rain, and yet flowering year after year—seemingly indifferent to frost and drought.

Plant 4 inches deep and 9 inches apart : if transplanting has to be done, it should not be undertaken later than five weeks after flowering, as the resting time of *L. candidum* is unusually short. *L. candidum* does not usually set seed, and is not generally self-fertilising.

When purchasing this Lily, avoid French-grown bulbs that do not come from Normandy or Brittany, and give the preference to those raised in Great Britain.

The variety *robustum* is reported to resist the disease *Botrytis cinerea*, to which *L. candidum*, with its large ever-green leaves, is specially prone.

There is a fine, black-stemmed variety, *peregrinum*, which is not common, and a beautiful form, *aureo-marginatum*, in which the leaves are edged with yellow—as well as a double-flowered variety, and one with striped flowers, but neither is worth growing.

*L. carniolicum*, Parkinson's "bright red Martagon of Hungarie," though rarer than either of the two last-mentioned species, is of no very great interest : it is found in a restricted area in the mountain passes of Carniola, one of the many small States clustering round the north of the Adriatic, and is a true Turk's Cap growing a couple of feet high.

It bears a few flowers of a rather nondescript shade of brick-red, and grows under much the same conditions as



the Orange Lily, though not responding to cultivation to the same degree as that satisfactory plant.

In any garden where room is scarce, *L. davuricum*, *L. bulbiferum*, and *L. carniolicum* may well be omitted from the species cultivated.

**L. chalconicum**, the scarlet Martagon of Greece and one of the few species known to Linnæus, is another old plant in gardens, and one of the most accommodating, for, like *L. candidum*, it will bear with a good deal in the way of drought. It cannot, however, in truth be said to boast a particularly strong constitution, and of late years this Lily has suffered to a great extent from disease—so much so, that it is an exceptional thing to find a clump of it in which a large proportion of the stem leaves are not brown and more or less withered.

When well grown, *L. chalconicum* will get up to 3½ feet, but is more generally met with about 2 feet high. It cannot be called a graceful plant in the way that the other Scarlet Turk's Cap **L. pomponium** is graceful, but the sealing-wax colour of the bloom is striking, and a well-grown, good-sized clump in full flower is a sight to remember. It generally sets seed, and this germinates quickly.

The bulbs may be planted 4 inches deep in a position fully exposed to the sun, and in the same soil that suits *L. candidum* or *L. croceum*.

The variety *maculatum*, though not often met with in this country, is altogether a finer thing than the type, being far more vigorous and approximating to *L. testaceum* in its habit of growth.

**L. concolor**.—Originally from China, but now cultivated commercially by the Japanese nurserymen, this miniature Lily may be managed by any one who can give it a sandy soil of no great depth, and plenty of moisture in late spring



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and early summer. It only grows from a foot to 18 inches high, and from the top of the stem sends out three or four symmetrical, upright, star-shaped flowers not much larger across than a crown piece, and of a fine crimson colour with deeper spots.

The bulbs are small—as a rule, no bigger than a walnut—but have a wonderful power of reproduction, and if a marked bulb is examined after a season's growth it will often be found to have split up into a cluster of three or four, all attached to one another, and each not much smaller than the original bulb.

*L. concolor* is so floriferous that it sometimes seems to exhaust itself, and cannot be depended on to flower every year. It should be planted about 5 inches deep in a position exposed to full sunshine, and if massed in clumps of twenty or thirty—as well it may be, since the bulbs are cheap—the effect is very beautiful.

The variety *coridion* is like the type except that the flowers are a deep yellow colour instead of crimson.

Although *L. pulchellum* is referred botanically to *L. concolor*, it has a bulb which remains solitary and does not split up into clusters, while it is peculiar in that it not infrequently has bulbils in the axils of the leaves. The individual blooms are rather smaller than in *L. concolor*, but in habit of growth the two are identical. *Pulchellum* is not often met with in gardens.

*L. concolor* ripens seed in hot summers, and this germinates more quickly than most Lilies.

*L. croceum*, the Golden Lily of Parkinson, and known everywhere as the Orange Lily, is, like *L. candidum*, a very common plant, but a lovely one; it hails from Corsica, grows best in a stiff loam, and if its roots can get down to a bed of clay the garden Lily shows extraordinary vigour



when compared to the wild plant, growing higher than a man and bearing huge umbels of its beautiful blooms. A clump of thirty or forty plants of this Lily, with the setting sun shining through the deep red gold of the petals, is a sight to be remembered.

*L. croceum* seeds freely and increases rapidly at the bulb, which may be planted 4 inches deep in full sunshine.

*L. c. Chaixii* is a dwarf, lighter-coloured variety from the Maritime Alps, and not of much account.

*L. davuricum* is a wild plant of Siberia, in habit not unlike a slender, dwarf form of the Orange Lily, the small, upright, cup-shaped flowers of a dull and rather uninteresting shade of cherry-red, borne in umbels of four or five.

Nowadays the typical plant is not often met with in gardens, its place having been taken by *L. umbellatum*, a garden plant as to the parentage of which authorities do not seem agreed, though it is generally considered a cross between *L. davuricum* and another Lily, probably *L. elegans*.

It has been cultivated to an enormous extent by nurserymen, who, after the manner of their kind, seem to have christened every seedling showing a decided variation in colour with a distinctive name, so that the numbers of named varieties are bewildering.

Of the varieties to which so much space is allotted in the bulb catalogues, the amateur may well rest satisfied with one, *umbellatum incomparabile*, a fine blood-coloured form and better than any other variety or the type.

Bulbs of *L. umbellatum* are never very large. They may be planted 4 or 5 inches deep in loamy soil in full sun : they need rather more drainage than does *L. croceum*, and if this is not seen to the variety *incomparabile* will almost certainly rot in an exceptionally wet winter.



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**L. elegans** is the type of a dwarf Japanese Lily having upright, cup-shaped flowers of a reddish hue ; the number of its forms and varieties is legion, and, according to botanical authorities, includes two or three which it is reasonable to suppose are of hybrid origin, such as *L. Batemanniae*, *L. Wallacei*, and *L. elegans Wilsonii*.

The typical plant is not of great interest and need not be considered, while of the many garden sorts of both Dutch and Japanese origin, a grower who has the dwarf, light yellow-flowered Alice Wilson, the dark crimson Horsmanii, the deep apricot venustum, and, above all, the tall, late-flowering variety Wilsonii, may well be content to leave the multitude of other varieties to those who order their bulbs from the descriptions in the catalogues.

All the elegans section are stem-rooting Lilies, and are distinct among Japanese sorts in that they do best in light sandy soil ; they may be planted 8 or 9 inches deep in the sunniest part of the garden among dwarf shrubs.

The reason for the inclusion of *L. Batemanniae* and *L. Wallacei* in the group of elegans Lilies is not very evident ; the bulb of the former is distinct and all but identical with that of *L. Maximowiczii*, while the bulb of *L. Wallacei* has little resemblance to that of *L. elegans*, and is close to *L. concolor*.

**L. Batemanniae** grows as much as 3½ to 4 feet high, carrying its rich apricot cups in terminal umbels. It is generally recommended that this Lily should be grown in full sunshine, but the author has noticed that it seems to do far better in semi-shade, and certainly the foliage of those growing in half-shady places does not wither prematurely as it so often does when the Lily is planted in full exposure ; this dying off of the foliage is a serious drawback to an



otherwise beautiful Lily, and no doubt indicates some fault in the cultivation.

In Japan the Lily is found in West Hondo ; it is cultivated near Osaka where very sandy soil prevails, and a similar soil seems to suit it here.

**L. Wallacei**, named after the enthusiast who did so much for the culture of Lilies thirty or forty years ago, and whose *Notes on Lilies* contains such an extraordinary amount of interesting detail on the genus, is, in its way, a charming plant, though sometimes a little shy of showing its rich orange-coloured flowers. Introduced to cultivation by Dr. Wallace in 1877 as a probable hybrid between *L. Maximowiczii* and *L. concolor*, this Japanese Lily has since become quite common, no doubt because, of all others, it seems to have the most extraordinary tendency to reproduction, the bulbs continually splitting up into fours, and as a rule before they flower ; so that a single bulb will form scores of others in a few years. Careful consideration of this Lily leads one to suppose that the male parent is more likely to have been *L. tigrinum* than *L. Maximowiczii*.

It grows in light soil, and may be planted 5 or 6 inches deep.

**L. giganteum**.—Without doubt the most noble Lily known to man, if not the most beautiful, *L. giganteum* deserves to be grown far more widely than it is, for nothing more than a deep rich soil, plenty of moisture in summer, a little protection in winter, and some patience, are needed to enable one to succeed with it, at any rate in all but the colder parts of the country.

Peculiar in many ways, in none is it more so than in its habit of throwing up no stem worthy the name till the bulb has reached a certain age ; then when the psycho-



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logical moment arrives the stem appears, growing from 4 up to 10 feet high and even more, according to the cultivation, and with as many as twenty blooms. The flowering season over and the bulb having fulfilled its destiny, it forthwith dies, leaving behind it to carry on the race two or more small offsets; these grow till in course of years they too send forth their stems and flowers, and, all being well, the process is repeated *ad infinitum*, till, in place of the original bulb, there is a clump of many.

Not the least attractive point of *L. giganteum* is the foliage; the large leaves are often a foot long and more than half as broad, the upper surface a bright shiny green plainly netted. Clustering Funkia fashion round the lower part of the stem on longish stalks, they shade the ground round the bulb from the sun's rays, keeping it cool and moist, and as the huge, hollow stem grows up and up, each succeeding leaf comes smaller than the last, the stalks gradually shortening, till at the top only a vestige of a leaf remains.

*L. giganteum* ripens seed freely, and if sown in November seedlings will usually make their appearance in the following spring; they are best kept in reserve till the bulbs are about the size of a walnut, and then they may be planted out at no great depth, a covering of leaves being put over them in winter.

Though one can hardly feed *L. giganteum* too highly in the garden, it grows splendidly in woods, and may even be seen growing in stony, unlikely-looking places, provided there is moisture for the roots in summer.

**L. Grayi.**—There is an indefinable air about Asa Gray's Lily, *L. Grayi*, which leads one to regard it as a well-bred plant. It is rather in the way of *L. canadense* in its habit



of growth, though more slender and with smaller flowers, so funnel-shaped and semi-pendulous that, except in unusually tall specimens, one cannot comfortably see the insides without stooping down, or notice how copiously the unusual red of the segments is besprinkled with spots of a darker hue.

It is one of the many beautiful things coming to us from Virginia, where it has its home in the Alleghanies, and, like *L. pardalinum* and many other species, is happiest when it can dip its roots into moisture while keeping its bulb dry.

The bulbs are small, rhizomatous, and annual, and may be planted 4 inches deep in loose leafy or peaty soil, either in full exposure or partial shade. *L. Grayi* seeds freely in an average season, and every one of its little scales will quickly produce a bulblet if sown in a pan or border.

**L. Hansonii**, from Japan, is one of several Lilies for the introduction of which the world owes a debt of gratitude to the late Max Leichtlin.

It is a Martagon of medium growth, usually 4½ feet high and seldom exceeding 5 feet, very floriferous, and as easy to manage as the proverbial cabbage. It is equally at home in loam, limestone, or peaty soil, sunshine or shade, though the rich deep yellow flowers are apt to blanch a little if the Lily is planted where the sun may shine on the flowers all day; for that reason it is best to grow this Lily in partial shade.

It is one of the first of the family to make its début every year in early spring, and has in consequence to bear rather more than its share of the frosts and snows which occasionally cause such havoc in English gardens in April and May, but if in congenial surroundings it does not succumb. The author well remembers a day towards the end of



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April a few years ago, when, as a result of a fearful snow-storm the night before, a whole bed of this Lily had the stems literally bent almost to the ground for some hours with the weight of the frozen snow on the leaves, and yet within a few weeks the Lilies were flowering as gaily as ever, and as if nothing had happened.

*L. Hansonii* does not generally ripen seed in this country, no doubt because it is one of a large number of plants which is not, as a rule, self-fertilising, and those who want seed should attend to the fertilising—a very simple matter. Propagation by scales, however, is more certain, besides being much quicker.

In common with most of the Martagon family, *L. Hansonii* is rather prone to contract that fell disease *Botrytis cinerea*, no doubt because of the comparatively large surface of its whorls of leaves.

Like all stem-rooting Lilies, it needs to be planted deeply, and 10 inches is about right both for depth and spacing. It is a splendid Lily for pots.

**L. Heldreichii** is considered by Baker as intermediate between *L. chalcedonicum* and *L. carniolicum*. In gardens it grows about 2½ feet high, with three or four true Turk's Caps of a bright red, the back of the flower flushed with yellow. It succeeds where *L. chalcedonicum* grows, and under cultivation is a much finer thing than in its home on the mountains of Greece, where it usually supports a solitary flower.

**L. Henryi.**—Though discovered little more than twenty years ago by Dr. Henry in Central China, *L. Henryi* has taken a high place in the ranks of the genus, for it is a vigorous and beautiful Lily of the soundest constitution, requiring no special care or preparation, and seemingly



PLATE V  
L. CANDIDUM  
(See p. 47.)















indifferent to soil or situation, though the author has observed that it grows less strongly in light sandy soils than in those of a richer nature, and now and again has heard of *L. Henryi* refusing to grow in gardens where other Lilies flourish.

*L. Henryi* is a good example of the way many wild plants alter their growth under cultivation, for while Dr. Henry has placed it on record that he never saw the wild Lily exceed 4 feet in height or bearing more than four or five flowers, it is no uncommon thing to find it in gardens 9 feet high and with twenty of its beautiful, orange-coloured flowers, identical in shape with those of *L. speciosum Kraetzeri*.

Though naturally a limestone plant, it will grow well in ground containing no lime. It is easily raised from seed, which as a rule germinates the first year, and, unusually quick in growth, seedlings will bear a flower or two under favourable circumstances in the third year; in five years the bulbs will be as large as an orange, growing on till they are as much as 7 inches in diameter; they do not split up much but throw off quite a number of offsets, all of which should be looked after.

The bulbs should be planted about a foot deep among the taller-growing shrubs such as *Rhododendron*, *Cistus ladaniferus*, *Choisya ternata*, or *Berberis Darwinii*, which will give support to the tapering stems so peculiar in that they are naturally too lax to grow upright, and in consequence rather awkward to stake conveniently.

*L. Henryi* grows equally well in sunshine or shade, though the blooms blanch a little in hot summers if fully exposed; it is a thirsty plant when growing.

*L. Martagon* is the oldest Lily in the British Isles



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and the representative of the largest section of the genus ; it grows and flowers almost anywhere where its seeds happen to fall, and, while often seen flowering in the most unlikely places, does best in a stiff loam, like so many of the commoner Lilies.

When raised from seed it varies a good deal in colour from light to dark pink, with purple spots, and a bed of seedlings will usually show plants the colour variations of which, with further selection, would no doubt ultimately lead to the appearance of the white form album, a beautiful and accommodating plant and the hybridiser's joy.

If proof were needed that this white variety is a garden form of the other, it may be had in the seedlings of album, many of which hark back and reveal their origin by the pronounced pink tinge with which the petals are suffused and the faint purple spots.

Now and again one may find amongst a batch of these seedlings a flower or two between which and the rare and lovely Californian Martagon *L. Kelloggii* there is not over much to choose except in habit of growth.

*L. Martagon* has a short resting time, and planting should therefore be done early, as soon, in fact, as the seed is ripe ; large bulbs have a curious way of splitting up into four or five of walnut size and scores of scale bulblets, and all these may easily be grown on.

*L. Martagon* var. album flore plenum is an uncommon sport of the white form with double flowers, and is only worth growing as a curiosity.

Other varieties are *hirsutum*, not apparently in commerce, and *dalmaticum*, one of the many plants we owe to the late Max Leichtlin, and certainly one of the finest Lilies in cultivation ; it is so distinct as surely to be worthy



of classification as a species ; indeed it is regarded as such by Elwes. When well grown this Lily rivals *L. Henryi* and *L. superbum* in the magnificence of its growth, and plants may commonly be seen 8 feet high bearing as many as thirty of the shiny, deep wine-coloured flowers.

Cattaneæ is a very satisfactory form of the above in which the flowers take a lighter colour rather difficult of description ; a distinguishing feature in both these forms of Martagon is the mass of white hairs with which the unopened buds are covered, and which at a distance give them the appearance of small white balls.

*L. Martagon* grows equally well in sunshine or shade, and may be planted 4 inches deep ; it is a lime-loving plant.

**L. medeoloides.**—Though the advisability of including an uncommon Lily like *L. medeoloides* in a chapter dealing with easily-grown Lilies may be questioned, it will only be by those who are not familiar with the Lily, or do not know that its cultivation is simple.

A common Lily in Japan, where it is known as “ Kuruma Yuri ” or the “ Wheel Lily,” because of the way the foliage grows on the stem in the form of a wheel, *L. medeoloides* is a gem of the first water.

It is the baby of the Martagon section, more diminutive even than *L. tenuifolium*, seldom growing over 2 feet high, and more often 12 to 18 inches ; the bulb of this Lily is small, never larger than a big walnut, and is quite distinct from all others except the so-called *L. avenaceum* in that its tiny articulated scales resemble the oat grain.

The flowers, sometimes three or four in number but more often solitary or in pairs, recall those of *L. tenui-*



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*folium*, though the petals are not so reflexed; the colour varies from scarlet to apricot, both with and without spots.

In this country it grows well planted in lime-free leaf-mould with slight shade, and ripens seed freely; though a stem-rooting Lily, the bulb is so tiny that it need not be planted more than 6 inches deep.

In its home on the Nikko mountains of Japan the Lily grows in rich humus sometimes in the open, coming up through low grasses, but more often on the edges of the woods and in copses.

There has been some confusion regarding *L. avenaceum* and *L. medeoloides*, and the opinion may be hazarded that they are one and the same plant; the Lily described and figured in Elwes' Monograph as *L. avenaceum* appears undoubtedly to be the *medeoloides* of Japan, while the *L. medeoloides* of the Monograph, as to which, Elwes himself had doubts, does not seem to be known in Japan, though Mr. Alfred Unger of Yokohama reports having had a Lily identical in flower and bulb from Kiauchou, the *pied à terre* of Germany in China. It does not follow that this Lily is the true *avenaceum*, since Maximowicz' description of the latter shows it to be a Martagon, while the Kiauchou Lily has upright flowers and is an Isolirion.

**L. monadelphum**, and what is known as its variety, *Szovitzianum* (see Plate VII), for they seem inextricably mixed, from the Southern Caucasus, has a splendid constitution, does well on limestone or loamy soils, and if in congenial surroundings, will grow 6 feet or more high, and bear from twenty to thirty of its fragrant flowers.

Whether the monadelphous character of the typical



plant originally discovered by Bieberstein is constant is open to question, for of hundreds of flowers the author has examined, he has not found one in which the filaments are united from the base upwards.

The plant is very variable both as to foliage and colour of the flowers, and this applies quite as much to imported bulbs as to those raised from seed at home: in some the colour is a fine canary-yellow both with and without spots; in others the yellow pales almost to straw; while in yet others we find it the deep colour of *Coreopsis grandiflora*, and, to make confusion worse confounded, the anthers vary in colour as much as the petals.

In some of its forms this Lily shares with *L. testaceum* the peculiarity of keeping the flower-buds tucked away in the foliage till they are about to open.

Once established it dislikes being tampered with even more than most Lilies, and if moving is necessary, it should be done directly the seed is ripe; if the planting is deferred, the bulbs will quite commonly make no sign above ground the following season, but will appear as usual the year after.

It comes readily if slowly from seed, which may be sown in an open bed, the germination taking place underground. Established bulbs may be planted 5 inches deep in a position fully exposed to sunshine.

Of late years a fine form labelled by some *L. monadelphum*, and by others *colchicum*, has made its reappearance in this country after importation from St. Petersburg; in this variety the blooms are smaller and take rather more of the trumpet shape, while the colour is a very deep yellow, both with and without spots, but in those that have come under the author's notice the filaments are not united



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below, and the bulb, by which alone a separate species can be determined, though said to be different, is not distinguishable from those known as *L. Szovitzianum*.

*L. myriophyllum* (see Plate II).—One of the many “finds” of that prolific collector the Abbé Delavay, *L. myriophyllum* was originally distributed by Leichtlin some ten years ago, and has of late been brought into commerce. On one of his expeditions E. H. Wilson found this Lily on the Chino-Tibetan frontier growing at 3000–6000 feet in low scrub on rocky mountain-sides, and in some of the warm, dry river valleys thereabouts ; he considered it allied to *L. leucanthum*.

In cultivation it has proved a variable plant as far as the colouration of the flowers is concerned, and, in the form grown originally by Leichtlin especially, the contrast between the rich wine colour of the reverse of the petals and the gold shading of the throat is extraordinarily beautiful.

The Lilies of Western China present many points of interest to botanists in the difficulties attendant on attempts at classification ; considered by Baker as allied to *L. longiflorum* and by Leichtlin as belonging to the *Brownii* section, *L. myriophyllum* has a bulb which is indistinguishable from *L. leucanthum*, *L. sulphureum*, and *L. longiflorum*, and the Lily itself seems intermediate between *L. leucanthum* and *L. Brownii* ; it may be distinguished by the narrow linear leaves, which crowd densely round the stem, in a manner reminding one of *L. sutchuenense*. Judging by the behaviour of this Lily during the few years it has been in cultivation, there seems no reason to doubt that it is a fine plant with a good constitution, presenting no special difficulties to the cultivator ; as a stem-rooting Lily it should be



planted about 9 inches deep in a light, rich soil. It is singular in that the leaves remain on the stem for an unusually long time ; no doubt it was this peculiarity which led Leichtlin to describe it as almost evergreen.

**L. pardalinum.**—Though commonly supposed to be a peat-loving plant, the Californian Panther Lily will grow well in good loam, and does not object to soil containing lime. Elwes records it as growing and increasing freely in dry, hungry, oölite soil.

Essentially a moisture-loving plant, however, it is never seen to better advantage than when planted in full sunshine on the edge of a stream or pond where, the bulbs out of harm's way, the roots may push their toes into the water ; in such places it will climb up 7 or 8 feet high, the stems smothered in bloom of every imaginable shade between yellow and red, for a Lily more variable in the colour of its flowers does not exist.

The rhizomatous bulb rapidly increases, usually in horseshoe form, and in a year or two each one will throw up four or five flowering stems.

*L. pardalinum* may be planted 5 inches deep and 12 inches apart in sheltered or fully exposed positions, and, where it grows tall, should be screened from rough winds or carefully staked.

No wild Lily has more natural varieties, and while many have been christened with distinctive names, the variations in these named forms themselves are quite bewildering : in some the foliage is lanceolate, sometimes in whorls, sometimes broken up ; in others, again, it is oblanceolate and in regular whorls as becomes a Martagon ; in a bed of seedlings one may find all the forms of varying foliage as well as stature, and a range of colour from a fine light yellow to a deep red.



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Of late years several garden forms, mostly due to Luther Burbank, have come into commerce, and these are undoubtedly exceptionally fine. They have been given names such as "Glow," "Defiance," and "Red Giant," and are in every way well worth growing, though propagation is slow since it has to be by scale offsets, as the varieties cannot be relied upon to come true from seed.

The only form of *L. pardalinum* which can truthfully be said to be really distinct and to retain its distinctiveness is that known as *L. Roezlii*, a typical Turk's Cap as to its flowers, which are a beautiful light orange tint—in the way of *L. parvum luteum*—delicately spotted with maroon. It is a more slender Lily than the ordinary form of *pardalinum*, and the narrow leaves with which the stem is crowded give it a distinct appearance.

The rhizomatous bulb is usually solitary, and does not increase as does that of the type. It comes from Oregon and, like *L. maritimum*, is considered by Purdy as a true bog Lily.

**L. parviflorum** grows on the slopes of the Sierras at low elevations. In flower it closely resembles a small edition of *L. pardalinum*, and the variations in colour are much the same in both Lilies. *L. parviflorum* is usually in flower a week or two before the Panther Lily: it does not increase and send up a multitude of flowering stems as that Lily does, but is altogether a good thing. Plant about 5 inches deep in full sunshine in rather lighter soil than for *L. pardalinum*, and see to the drainage of the bulb.

**L. parvum.**—This is one of the mountain Lilies of the Sierras, neither exactly easy nor difficult to get on with, and, when well grown, an extraordinarily floriferous plant, and beautiful to boot. Mr. Purdy tells us that in its home in the sub-alpine regions about Lake Tahoe it grows 5 or 6



feet high in deep, moist, sharp soil along banks of the streams ; in this country it is seldom seen much over 3 feet.

*L. parvum* is a most distinct plant, with nearly upright, crimson-tipped, orange bells borne on long, slender pedicels, which give it an unusually graceful look.

The variety *luteum* is a really beautiful Lily far too little known ; it grows taller than the type, and has clear deep yellow flowers beautifully spotted.

*L. parvum* succeeds in circumstances that suit *L. Parryi*.

**L. philadelphicum.**—For some obscure reason *L. philadelphicum* has never been much in favour with horticulturists, and an undeserved reputation for delicacy may have some bearing on this. It is a pity, for the Lily is well worth growing, and does not strike one as particularly obstinate or difficult to manage ; it is quite hardy, and, moreover, ripens seed freely, and as this is readily cultivated, there is no need to rely on bulbs imported from America, cheap though they be.

Although a much more slender thing, *L. philadelphicum* seemingly takes the place in the Western world occupied by *L. bulbiferum* in Europe. It usually grows about two-thirds of a yard high, the erect, cup-shaped flowers springing from distinct claws in an umbel of three or four at the top of the stem ; though variable, they are usually a brilliant shade of orange dotted with purple.

*L. philadelphicum* is a common Lily in North America, and may be found from Canada to Louisiana. The bulb is peculiar and approaches more nearly that of *Fritillaria recurva* than other American Lily bulbs ; it is usually about the size of a good walnut and has the scales articulated. *L. philadelphicum* grows well in a light, lime-free soil in full sun, and may be planted 5 inches deep ; an excess of wet in winter is often fatal to the bulb if the drainage is slow.



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A particularly fine form introduced to cultivation by Leichtlin is named *Wansharaicum*. •

**L. pomponium.**—A native of the Maritime Alps, where it is found in a wild state  $2\frac{1}{2}$  to 3 feet high, this fine old Turk's Cap—the Martagon Pompony of Parkinson—responds so well to cultivation that one may have it more than 4 feet high and bearing a dozen of its scarlet flowers, so symmetrically formed that they might be made of wax and turned out of a mould; it is perhaps a more perfect example of the true Turk's Cap shape than any other Lily.

*L. pomponium* takes rather longer to become established than many of the so-called common species, and is slow of increase, though the seed, which is produced in abundance in most seasons, germinates quickly.

It may generally be seen doing well in full exposure in a rather strong loam, and, like *L. croceum*, it appreciates a subsoil of well-drained clay; it does not succeed so well in dry soil, nor is it at home in peaty mixtures, being essentially a plant for soils having lime in them.

The bulbs should be planted 4 inches deep and a foot apart.

**L. pyrenaicum**, or the Yellow Turk's Cap, though of the easiest culture, is not a thing of beauty, and may be described in a general way as a low-growing and very inferior, small-flowered *monadelphum*, though that indeed is flattering it too highly. The flowers have a peculiarly objectionable smell, and the best we can say of the Lily is that its bulbs are "fine and large," and that, while it will grow almost anywhere, it does best in a heavy loam in full sun. As its name implies, the Lily is a wild plant of the Pyrenees, but is stated in Elwes' Monograph to have been found in Transylvania and Bosnia, 1000 miles away.



**L. Jankæ.**—This plant also is found in the mountains of Transylvania, and is considered by Baker to be nearly allied to *L. pyrenaicum*, from which it differs in its taller growth and larger flowers : there is not any great difference between *L. Jankæ* and some of the poorer forms of *L. monadelphum*.

**L. speciosum.**—Originally a native of Korea and found by Thunberg more than a hundred years ago, *L. speciosum*, in one or other of its many beautiful forms, is known to all : indeed, with the exception of *L. longiflorum*, no Lily is probably more used for pot culture and forcing. While not perhaps a plant for every garden, the cultivation of this Lily does not lay any great tax on the resources or ingenuity of the Lily grower, and its requirements once understood, *L. speciosum* may be relied upon to prosper, sending up its flowering stems year after year in increasing numbers, and only failing now and again when our English summer proves especially inhospitable to this Eastern beauty.

While from his own experience the author is not able to say that *L. speciosum* will not grow in limy soil, there can be no sort of doubt that it is more at home in ground that is free from lime, and it may be grown to perfection in a rich, open, woodland soil overlying a stiff, red, sandy loam, into which its long roots can wander as they please.

On the richness of the top soil depends the growth of the stem and flowers, and it is no exaggeration to say that one cannot mulch this Lily too much.

It opens its flowers so late in the season that it is probably best to plant *L. speciosum* in full sunshine, and if the summer should prove exceptionally hot the only effect will be that the Lily may flower a little earlier than usual, while the blooms will fade sooner than if the plant is in shade. That, however, holds good for all Lilies, and the objection to



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planting these late-flowering "woodland" Lilies of Japan in partially shaded places is that in cheerless summers, such as we have had in 1909 and 1910, many of the flower-buds will not open.

Bulbs of *L. speciosum* may be planted 10 or 12 inches deep, of course among ground-shading shrubs, and if there is any doubt about the drainage it is best to lay the bulbs on inverted pots.

Though of Japanese origin, *L. speciosum* has been raised in enormous quantities by the nurserymen of Holland during the past half-century, with the result that the character of the Dutch flowers has undergone some change, and, if the truth must be told, some deterioration when compared to their Japanese prototypes.

Whatever the cause, there can be no question that the Japanese flowers are indubitably finer in size and richness of colouring than those raised in Holland; but the bulbs of the Dutch-grown sorts are in themselves far more satisfactory, for the roots are not cut off, there is an absence of disease, and they come to market generally in far better condition than those from the East.

Those who wish to grow the Japanese sorts should pot the bulbs for the first season, cutting off all flower-buds that may form, and planting out any that are in good condition after the first year's growth; this may be a trial of patience for some, but it is the best way in the end.

Of the varieties imported from Japan, *Kraetzeri* (see Plate III) has a beautiful, snow-white flower with a golden green stripe down the centre of each petal, and anthers of a coppery tint. Alike in the form of the flower and its way of growing, this Lily is one of the most beautiful we have.

Of coloured varieties from Japan there are many, and



while all of them are variations on the theme of pink and white, two, *rubrum magnificum* and *Melpomene*—the latter of American origin—stand out prominently from the others, the former on account of its vigorous growth as well as the size and depth of colouring of the blooms, and the latter for the delicate beauty of the lighter-coloured flowers.

*L. s. rubrum magnificum* was found some few years ago by collectors of the Tokyo and Yokohama bulb merchants, in the small group of the Koishikijima Islands west of Nagasaki, where the bulbs are looked upon as a by-product and cultivated in the fields among crops such as potatoes, the bulbs being planted between the rows. When of a suitable size the ripened bulbs are cleaned up, dried in the sun, and exported to China as food.

There are other forms of *L. speciosum*, such as *rubrum*, *roseum*, and *punctatum*, but if the amateur has *Kraetzeri*, *Melpomene*, *rubrum magnificum*, and grows them well, he will need no others.

Of the Dutch varieties, the forms *album*, *roseum*, and *rubrum* are good of their kind, but, as already explained, inferior to the Japanese plants in beauty, though the bulbs are better.

The stems of some varieties of *L. speciosum* are a good deal subject to fasciation; the Dutch nurserymen have taken advantage of this peculiarity, and, having succeeded in making it permanent, have placed these monstrosities in commerce. The amateur will be well advised to leave them alone.

*L. superbum*, from the Eastern States of North America, is, when well grown, a magnificent plant, upwards of 8 feet high and with thirty or more flowers, the colour varying through every shade of yellow to orange-red. It is often



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confounded with *L. pardalinum*, and except that the petals of the flowers are more pointed and often larger than in the latter Lily, there is but little difference.

The bulbs, however, of the two species are distinct, and *L. superbum* does not come into flower as a rule till the Panther Lily is over.

In Nature an inhabitant of moist, peaty hollows, *L. superbum* will generally do well in situations where *L. pardalinum* flourishes, though it will not stand drought as well as that species, and is not partial to lime.

The bulbs may be planted 4 or 5 inches deep in full sunshine or partial shade.

**L. sutchuenense** is one of the moderns, having been collected by Father Farges in Szechuen barely twenty years ago. It is a most striking plant, and may be described as a refined Tiger Lily; the stem is thickly clothed with narrow linear leaves of a beautiful deep green. E. H. Wilson, describes it as common on rocky, grass-clad slopes of the Chino-Tibetan frontier region at 7000–9000 feet. He states that the bulbs are cultivated by the peasants as a vegetable.

When established in comfortable quarters this stem-rooting Martagon will grow 5 feet and more high, carrying as many as twenty blooms.

It shares with *L. Leichtlinii* and one or two other Lilies the peculiar habit of sending its flower-stem horizontally along under the ground for some distance before pushing its way through the earth: offsets form in numbers on this underground creeping stem and may be detached and grown on. This peculiarity is of especial joy to the cultivator, for as *L. sutchuenense* does not set seed in this country, the little bulbs provide a ready means whereby this uncommon but distinguished-looking Lily may be propagated.



PLATE VI

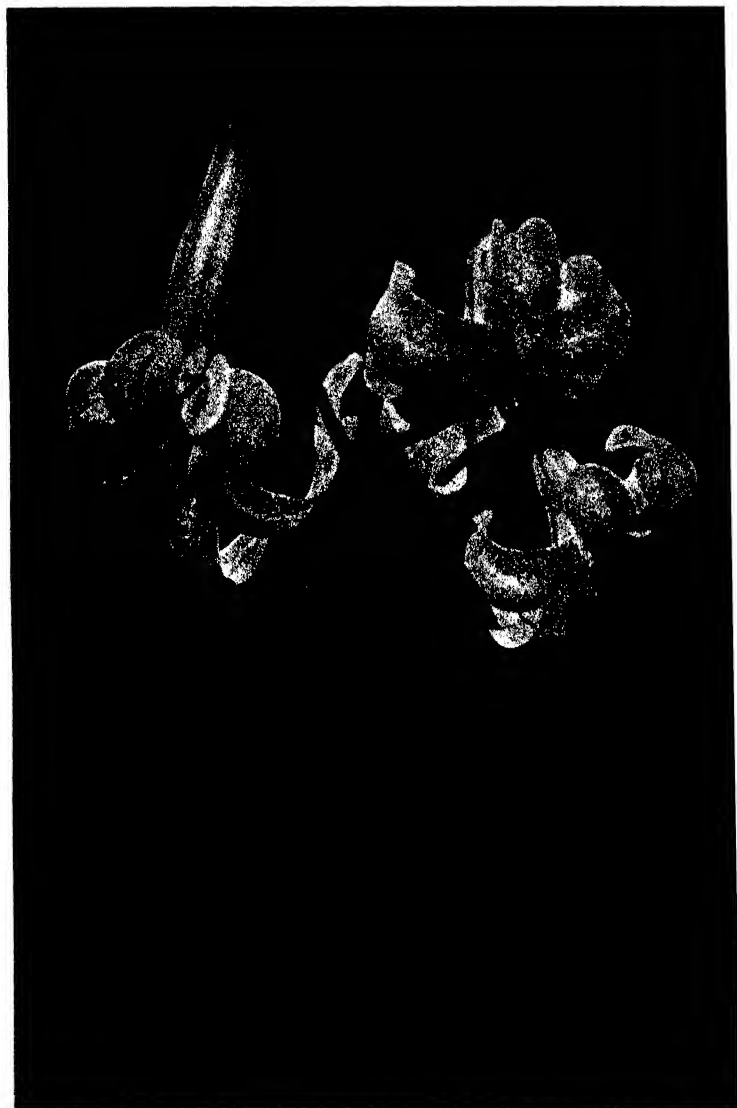
L. MONADELPHUM VAR. SZOVITZIANUM

(See pp. 30 and 62.)















When established the bulbs measure from  $2\frac{1}{2}$  to 3 inches in diameter, and may be planted 9 or 10 inches deep in a free, open soil of loam, grit, leaf-mould, and charcoal; as far as the author's observations go, it does not matter whether the loam has lime in it or not.

*L. tenuifolium*, the narrow-leaved Lily of Siberia, is an exceptionally attractive little thing, and well within the management of any gardener, once he realises that the bulbs are seldom of more than triennial duration, and oftener biennial. He must sow every season a pinch of the seed which is nearly always forthcoming, and the production of which in such quantities by a tiny bulb may in great measure be the cause of the brief existence of this Lily.

*L. tenuifolium* grows well in what we may term "Dutch" soil, that is, sand, preferably of the seashore, with which cow manure broken down fine is mixed, and the plant likes the sunniest place it can get, with plenty of moisture at the roots when growing. If this Lily is not allowed to seed after flowering, the bulb does not die so soon as if left to work out its own destiny; but nothing apparently avails to keep it alive for more than four years.

The flowers are perfect Turk's Caps of a brilliant, sanguineous red, borne on slender stems about a foot and a half high.

The bulbs, in shape not unlike those of a Tulip, are unique among Lilies in that they are composed of a few large, smooth leaves or scales which fit over each other tightly, rather like those one finds in the heart of a globe artichoke; they should be planted 4 or 5 inches deep in soil that is very perfectly drained.

*L. testaceum*.—The origin of *L. testaceum* or the Nankeen Lily is uncertain. It has been said to come



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from Japan, though neither of its reputed parents grows there, and in Dr. Wallace's *Notes on Lilies* reference is made to the fact that he has actually seen a figure of this Lily amongst a collection of Japanese drawings. There does not appear to be any record of it having been found in a wild state, and the common supposition that it is a hybrid between *L. candidum* and *L. chalcedonicum* seems reasonable, though if the Lily "Golden Gleam," the cross between the Siberian Turk's Cap and the White Martagon, is any guide as to colour, one would expect a cross between the reputed parents of the Nankeen Lily to have more colour in it. It is also a little difficult to understand how a disagreeable smelling thing like *L. chalcedonicum* can have any connection with a Lily of such sweet fragrance as the one under notice.

*L. testaceum* is first recorded as having made its appearance in a nursery at Erfurt in 1846, and it soon spread to this country. It does not ripen seed, and is rather slow of increase; no doubt that is the reason why the bulbs are rather expensive. Except that it is not a good plant for a dry place, it does well under the same conditions as *L. candidum*, and should be planted the same depth.

**L. tigrinum.**—Restrict a gardener to twelve sorts of Lilies and surely he will choose the Tiger Lily as one of them, not only because he has known it from his childhood's days, but also for its beauty.

Introduced to this country from China more than a hundred years ago, the original species, *L. tigrinum sinensis*, soon found its way into gardens, and in one form or another it has since become a very general favourite—so much so, indeed, that to-day it is probably a cheaper Lily to buy than any other.



The reason of this cheapness is not far to seek, for *L. tigrinum*, even if indifferently grown, produces a crop of tiny bulbs on the axils of the leaves, and when these are removed and grown on in beds they produce flowering bulbs in only three years, so that nurserymen and others have at hand a simple and unusually expeditious method of propagation. In addition to this, the Tiger Lily is cultivated in Japan in great quantities as a vegetable, and there is therefore always a good stock on which the merchants are able to draw for export to foreign countries.

In many gardens, especially those in which there is much lime in the soil, *L. tigrinum* gradually dwindles away after the bulb has reached maturity, and probably it is only the simplicity of propagation that keeps up the stock in such places.

Of late years the original species has largely given place to two varieties, *L. t. splendens* and *L. t. Fortunei*, each finer in every way than the older plant, and easily recognisable, the first by its dark, almost black, smooth stems, and the latter not only by the magnificence of its growth but the hairiness of the stout, upstanding stem.

The double form, flore plenum, is a common article of commerce, and for those who appreciate these forms is probably more satisfactory than the double varieties of other Lilies.

The Japanese merchants annually export thousands of Tiger Lilies, especially *L. t. Fortunei* and its huge form, *Fortunei giganteum*, the bulb of which is much larger than the other varieties, and which alone, amongst Lilies exported from Japan, shares with *L. Hansonii* the satisfactory reputation of being more or less certain to flower well the first season after planting.

The Lily does not seed in this country, but, as already



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explained, reproduction is provided for in a simple and satisfactory way by means of the axillary bulbils. Any one wishing to use the Tiger Lily for hybridising purposes will generally be able to induce it to set seed by removing the axillary bulbils directly they appear, so that all the energy of the plant is thrown into the bearing of seed and is not used up in nourishing the bulbils.

The bulbs of the old form and of the variety *splendens* may be planted 6 or 8 inches deep, and those of *Fortunei* a foot deep in rich, lime-free soil, all in full sun. *Splendens* is one of the best plants we have for potting.

If the stem bulbils are not removed they fall to the ground in due course, and a proportion of those that escape the attention of birds and slugs may eventually put out roots and pull themselves into the ground; so that in established plantings one may see masses of young Lilies rising up among the parent stems; but unless the ground is rich or well mulched these seldom attain the proportions of their parents.

## CHAPTER XIV

### THE MORE DIFFICULT LILIES

As in the case of Lilies classed as easily grown, criticism may be directed to the arbitrary inclusion of several of the following Lilies under this head, for to individuals the cultivation of some of them will undoubtedly be a simple matter; in a general way, however, it may be said that, as far as our experience goes at present, all the Lilies enumerated need a good deal more care and attention than those referred to under the head of easily-grown plants.



**L. Bolanderi.**—Although known to botanists for more than thirty years, *L. Bolanderi* is still rare in this country. It does not seem specially difficult to manage, and is well worth trying in places that suit *L. Kelloggii*. The slender stem seldom bears more than three dainty bells, and these are not unlike a miniature *L. Grayi* in shape, though semi-erect; the colour is a vinous red plentifully spotted with purple; the bulb is small, with wiry roots, and resembles a miniature *L. Humboldtii*.

**L. Brownii.**—Though, as things go, comparatively an old plant, having made its first appearance in this country more than a hundred years ago, the habitat of *L. Brownii* was never known with certainty till 1888, when Henry chanced upon it growing wild in some of the gorges of the Yangtse-kiang.

The Lily usually grown in gardens as *L. Brownii* is derived from the Dutch and Japanese nurserymen who cultivate it in large quantities. Whether it was ever identical with the typical plant or whether, as sometimes happens, its characteristics have undergone some change under cultivation is not clear, but it is evident that the *L. Brownii* of gardens is not in all respects the same as the typical plant of Western China, and the garden form—as we may call it—is that referred to in this section.

Though often grown as a pot plant, *L. Brownii* is by no means a common Lily in gardens, and in many places has a disappointing way of dying just as one thinks it has become established: it seems less able than many species to stand a superabundance of moisture in winter, and this may have something to do with the reputation it has earned for itself of unreliability. The late Dr. Wallace suggested that possibly the singular shape of the bulb might



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furnish the key to this weakness, for the scales are cupped at the base of the bulb in a way to catch and retain moisture passing through the earth. Whatever the cause of its frequent failure, there is no doubt one cannot have too quick a drainage for *L. Brownii*.

Sometimes it does well for a time in light, sandy soil, raising the hopes of the grower only to dash them down again by dwindling away in such soils, as likely as not from starvation ; in those gardens where it is more or less perennial it will be found that it does best under conditions that suit *L. auratum* and *L. speciosum*, though, unlike those species, it bears with lime.

Although usually content to produce a solitary flower on its slender stem, seldom more than a yard high, *L. Brownii* appreciates careful cultivation, and if in surroundings that suit it, will put forth three of its beautiful, chocolate-tinted trumpets, a trifle coarser perhaps, and certainly less funnelled, than those of *L. longiflorum*, and with the inside as waxy as the bloom of a Camellia.

According to botanical authorities, *L. Brownii* has several varieties ; they are all remarkably fine Lilies, and it is to be hoped that before long they may be in more general cultivation than they are at present.

Sent home by Henry at the time he found *L. Brownii*, *L. leucanthum* has proved a splendid addition to our list of Lilies, for it is more robust than the garden type and is, moreover, readily propagated by the bulbils which form in numbers in the axils of the leaves, and which are easily grown on in pans.

The presence of the axillary bulbils, the way the plant presents its flowers, its general habit of growth, as well as the bulb, are all reminiscent of *L. sulphureum* ; though



it grows a good deal taller than *L. Brownii*, it is not much more than half as high as *L. sulphureum*; the blooms are tinged with yellow on the outside, and not chocolate as in *L. Brownii*, and they are of a curious tubular shape when first opening.

The variety chloraster, another of Henry's discoveries, is not in general cultivation, nor is platyphyllum.

The bulbs of *L. Brownii* and its varieties may be planted 9 inches deep in full sunshine.

Besides the typical form of *L. Brownii*, which as reported by Henry is a far more robust and floriferous Lily than the form known to gardens, it is probable that further exploration in China may bring to light other forms of Lilies leaning sometimes to *L. longiflorum* and at other times to *L. Brownii*, and, assuming that the two have a common ancestor, it is even possible the various stages of the connecting links between them may be discovered, and light obtained upon the relationship between *L. leucanthum* and *L. sulphureum*.

Among the collection of Chinese plants formed by the Abbé David there are several which seem to favour *L. longiflorum* as well as *L. Brownii*, and *L. myriophyllum*, one of the newest Chinese Lilies, is a good example of the difficulty of classifying some members of the family, for it seems intermediate between the two.

**L. callosum.**—This species never seems to have appealed much to English growers, and this is remarkable, as its requirements call for no very special efforts on the part of the gardener. Possibly the way it has of flowering late in the season may have caused growers to turn a blind eye to the Lily's charms; but it is no later than *L. sulphureum*, with which a good many people toy.



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*L. callosum*, so called because of callous bracts on the flower pedicle, is a very variable plant, and that may also have something to do with its scarcity in gardens, for many of the bulbs throw flowers of a muddy, rather uninteresting shade of red, and any one seeing this and not knowing that the Lily can do much better, would probably consign the bulbs to the rubbish-heap.

Though never so brilliant in colour as *L. tenuifolium*, which it somewhat resembles, though a much taller Lily, *L. callosum* will often produce a fine head of a good, brick-red Turk's Cap blooms not quite comparable in colour to any other Lily.

Growers who only know the dull red-flowered form of the plant may take heart, for Henry discovered *L. callosum* in the Yangtse gorges some years since and reported the flowers as a brilliant orange colour.

Unless planted in light, porous, warm soil, *L. callosum* cannot be relied upon, as, being a late bloomer, the bulbs go to rest during the late autumn and early winter rains, so that in this country they are wet when they should be dry. Needless to say, this Lily requires full sunshine.

On the whole, unless one can be sure of obtaining the better-coloured form, and leaving the door open for the Yangtse Lily of Henry, the opinion may be expressed that *L. callosum* is the least interesting of the species of *Lilium* found in Japan.

***L. carolinianum*.**—This species, otherwise known as *L. Michauxii*, is a Lily of the Southern United States, being found in swampy places in Carolina, Louisiana, and Florida ; it is sometimes said to be a southern form of *L. superbum* ; and while the bulb is nearer that species than to



others, there are interesting points of difference between the two in foliage, flower, and habit.

The Southern Swamp Lily seldom attains a height of 3 feet or bears more than three flowers; to a great extent it resembles those of *L. superbum* and yet is different; the segments are of a lighter colour and not nearly so reflexed, while the blooms are quite fragrant, and there is altogether an undefinable air about this Lily not easy of expression. The plant may fairly be described as uncertain, and perhaps it is not fair to expect a Southerner to be quite hardy in the cold parts of Great Britain. *L. carolinianum* is quite worth having, provided the grower is interested enough in Lilies to attend to its wants, and it may be planted under conditions that suit *L. superbum*, though full exposure to sunshine seems to suit it better than shade.

**L. Catesbæi.**—Catesby's Lily, *L. Catesbæi*, is a very striking little plant from the Southern States of North America, and with *L. philadelphicum* is the only representative of the Isolirion or erect-flowered Lilies known in America.

In common with *L. candidum* it grows on after a short resting time, and for that reason, coupled with the fact that it comes from a warm climate, is liable to be cut down in cold weather, so that, if it is to succeed in gardens away from the South and West Coasts, it needs a certain amount of coddling.

The small bulb is unlike that of any other Lily, being made up of a few rather loose, tapering scales, from the apex of which thin, rush-like leaves appear. The life-history of the bulb seems to be very much that of *L. giganteum* and the others of the Cardiocrinum section, for it dies away after flowering, and the Lily is not a true perennial, at any rate in gardens. The bulbs may be planted 5 inches deep



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in full exposure, and in sandy soil with moisture below. Any one wishing to try *L. Catesbæi* may grow it over a shallow milk-pan or something of that sort, filled with stones and sunk about 10 inches below the surface of the ground ; if the pan is kept full of water, which can be poured down a short piece of pipe, the roots can get down into it while the little bulbs are in a well-drained surface soil.

In shape the usually solitary flower is not unlike *L. davuricum*, though the colour is far more brilliant, and there is a slender grace about the plant not found in *L. davuricum*.

*L. columbianum*.—This pretty little Martagon, often known as the Oregon Lily, is a native of that State and of Washington County ; it grows at low elevations in moist, well-drained ground.

It is a slender-growing Lily about 3 feet high, with the leaves arranged true Martagon fashion in regular whorls, and with five or six golden orange-coloured flowers borne in graceful, semi-pendulous way from long pedicels in a terminal umbel.

The bulb, flowers, and general habit of *L. columbianum* remind one very much of *L. Humboldtii* in miniature. For some reason it is not generally found over easy to establish in English gardens, but once settled comfortably in a good leafy-loam with drainage, it may be relied upon to prosper. The bulbs may be planted 6 inches deep in full sunshine.

*L. cordifolium*, the Heart-Leaved Lily, shares with *L. giganteum* the honour of having a subsection of the genus *Lilium* almost to itself, for, along with *L. mirabile*, a Western Chinese Lily not yet in cultivation, the two go to form the



section *Cardiocrinum*. It is sometimes held to be a Japanese form of *L. giganteum*, and an examination of the bulbs certainly leads to the conclusion that except in size they are much alike. That they may be the same Lily altered by centuries of geographical and climatic differences is not at all impossible, for we know from Henry that *L. giganteum* is recorded as far east as Yunnan, while Elwes records in his Monograph that the Abbé David found a form of *L. cordifolium* in the Lushan mountains, and that Fortune reported it near the seaport of Ning Po. Western China may conceivably yield connecting links between the two plants.

Whatever the relationship, the two Lilies are very different in their behaviour in Great Britain, for while *L. giganteum*, as already explained, is easy to manage, *L. cordifolium* does itself less than justice, a poor, puny thing rising barely 3 feet from the ground and with insignificant, half-developed flowers; contrasting strangely with the noble growth of the Lily in its own country. In gardens the Lily may be planted 8 or 9 inches deep in sandy humus; it seems to prefer a little shade.

*L. Glehnii* is considered by Elwes as a Northern Japanese form of *L. cordifolium*, and behaves in our gardens in just the same way as that Lily. Any one wishing to see what it is capable of in Japan should turn to the *Gardeners' Chronicle* of January 7, 1905, where the Lily is figured by Elwes about a foot taller than the native standing by the side of it; from this photograph it is clear that in this Lily the leaves do not cluster round the base of the stem as in *L. giganteum*, but their place is taken by the tall grasses amongst which this Lily grows.

Though both *L. cordifolium* and *Glehnii* are poor



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things as we see them in flower in our gardens, the young growth of each, when it first sees the light of day in spring, is one of the most beautiful things in nature : wrapped on itself as tightly as the umbrella of a Piccadilly dandy, the first leaf pushes its way out of the crust of the earth for all the world like a solid stem, to uncurl, in a few days, very much as does the Canadian Bloodroot, showing the beautiful deep red of the veined leaf ; as the leaf rises higher and higher out of the earth, the colour gradually changes, till, when fully developed, the deep red of its birth has given place to a bright, glossy green exquisitely netted.

**L. Humboldtii.**—Though a veritable giant among the Lilies of the more northerly ranges of the Sierra Nevada mountains, *L. Humboldtii* is usually content, when grown in Great Britain, to be shorn of much of its stature and remain more or less dwarfed. It is eminently a Lily for the specialist, and may be passed over in favour of the more robust variety hailing from the mountains of Southern California and known as *L. Humboldtii magnificum*, as easy to manage as the other is difficult, but still perhaps hardly obliging enough to be entitled to rank as an easily-grown Lily ; it is not hardy in the broad sense, for cold that will convert the bulb of *L. tigrinum*, for instance, into a frozen ball without any ill effects, would be fatal to *L. H. magnificum*. It is necessary, therefore, to guard against that contingency.

Quite commonly growing 5 feet high, and sometimes even six, the stout, red-brown stems carry their beautifully reflexed blooms very much as the Panther Lily does, on long pedicels ; the individual flowers, in shape like a much-enlarged *pardalinum*, are an indescribable combination of orange, red, and gold, thickly covered with purple spots



which give them a very bizarre appearance, so that at a distance they resemble some huge, gaudy butterfly.

*L. Bloomerianum* is a still more southern form of *L. Humboldtii*, neither so stately nor so attractive as the variety *magnificum*, though about as simple to manage.

*L. Humboldtii* and the varieties may be planted about 9 inches deep in a free, very gritty loam, the bulbs well drained ; like all Californian Lilies it should be grown in full sunshine. The plant is not a lime-hater, and, according to Purdy, the only effect an excess of lime has on this Lily is to turn the leaves a very light colour—almost white, in fact.

*L. japonicum* (see Plate VIII).—For more than twenty years after it was sent to this country in the seventies by Mr. Kramer for distribution by Wallace, *L. japonicum*, so often called *Krameri*, held undisputed sway as the only pink-flowered Lily known to gardens, and it was not till *L. rubellum* appeared that the monopoly of Kramer's Lily came to an end.

In cultivation, *L. japonicum* is fastidious to a degree and by no means easy to keep ; indeed in this respect one may almost place it with *L. Leichtlinii* in a class to themselves, and advise no one to bother with them who is not prepared to battle unceasingly with each.

For the reasons explained in the paragraph on *L. rubellum*, imported bulbs of *L. japonicum* are seldom of much permanent use, though often enough producing a flower or two the first year, before perishing, and the grower's only hope lies in raising *L. japonicum* from seed : he may the more easily do this, as if two or three imported bulbs are potted up and put in a sunny place seed is almost sure to ripen, and will usually germinate the second season.



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The wild Lily comes from the central part of Nippon, and is found on the hillsides in the neighbourhood of Osaka and Shizuoka Ken ; the habitat of the Lily is very similar to that of *L. rubellum*, but the soil in which it grows is more intermixed with sand.

In this country one may grow it in places that suit *L. rubellum*, planting the bulb—seldom as large as an egg—8 or 9 inches deep on very quick drainage and keeping the winter rains off as much as possible ; it is an early Lily, and the bulbs should be in the ground by September.

As seen in gardens *L. japonicum* is seldom robust, and one sometimes wonders how the slender, rather low-growing stem is able to support the four or five flowers the Lily will bear when in happy circumstances.

The flowers on different plants vary in colour from a faint blush to deep pink, and there is a white form which is not often seen.

Of varieties of *L. japonicum*, *L. colchesterense* is often met with under the name of *L. Brownii odorum* ; it is a very satisfactory Lily and one of the most prolific plants imaginable in production of bulb and stem offsets.

There seems a good deal of doubt as to the origin of this Lily, which was introduced to modern cultivation by Dr. Wallace, who stoutly maintained that it had no connection with *L. Brownii* and was a variety of *L. japonicum*.

The foliage is coarser and shorter than in *L. Brownii*, while the flowers are less funnelled ; on the whole the plant has not the slender grace of *L. Brownii*, and the chocolate colouring of the outside of the petals is less marked, but for all that is well worth growing, and most gardeners will find it easier to manage than the type.



PLATE VII

L. JAPONICUM

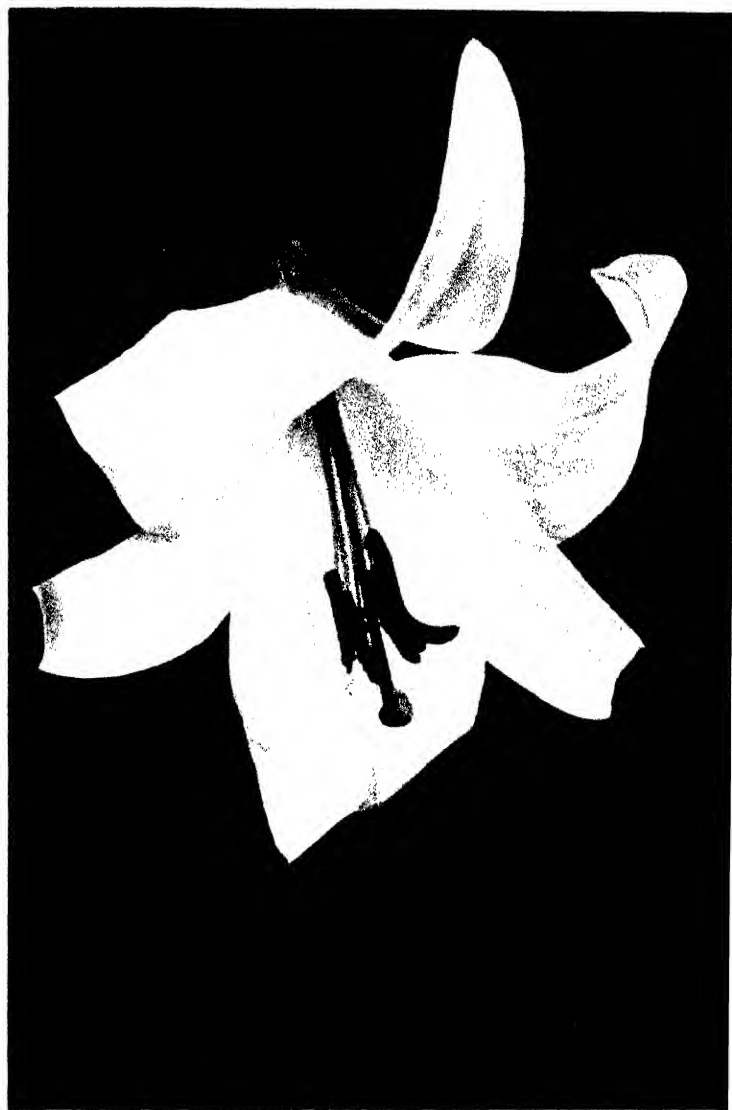
(Usually known in gardens as *L. Krameri*)

(See p. 87.)















*L. Alexandræ* is still very rare ; it comes from the island Oshima, one of the group of the Liukiu islands south of Kiushiu, whence also comes *L. longiflorum formosanum* ; the flower is large and pure white, with just a shading of green and gold at the base, and is a really beautiful thing. Though new to Western gardens *L. Alexandræ* is figured in a curious little Japanese book of plants called *Zôho-Chikin-Shô* published in 1710 ; the illustration shows a solitary upright flowered lily, and it has bloomed in similar fashion in the author's garden ; with some protection in winter it may be grown outside by those who can manage *L. longiflorum formosanum*.

**L. Kelloggii.**—In *L. Kelloggii* we have a Lily quite new to cultivation, for it was only discovered a few years ago by that indefatigable collector Mr. Purdy, and, though figuring in the catalogues, is yet hardly known to gardens. It is a charming little Lily, and a true Martagon both in foliage and flower.

It is doing *martagon album* no injustice to say that it may turn its head when *L. Kelloggii* is in bloom, for imagine the white Martagon more slender in growth, less formal and stiff, with its white Turk's Caps deepening till the white becomes pink and that in turn gives place to a rich wine colour, and you have *L. Kelloggii*.

*Martagon album* may take comfort, however, for *L. Kelloggii* needs a deal of managing in our climate : sharp drainage it must have and a loose, very gritty, leafy soil ; the bulbs may be planted about 9 or 10 inches deep. The plant ripens seed and it germinates quickly ; it is not unreasonable to suppose that home-raised seedlings may prove more amenable to cultivation in their adopted country than their parents.



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*L. Leichtlinii* is at once the joy and despair of the enthusiast, and one uses the word advisedly, because far more than the usual meed of patience is needed to enable one to wrestle successfully with this exceptionally wayward Lily; victory, however, will come to the determined gardener.

First recorded forty years ago by Maximowicz, who found it in the woods round about the base of Fusi-Yama, *L. Leichtlinii* has never taken kindly to cultivation in English gardens, and though it comes and goes in some places, few are the people who can cultivate it for long.

The stem of *L. Leichtlinii* creeps about underground, sometimes for as much as a foot, before breaking through the earth, and whatever the cause, the peculiarity is of great use to the cultivator, for small bulbs form on the horizontal stem, and in the absence of seed help materially in keeping up the stock.

More of a real child of the woods than most of her sisters of Japan, Leichtlin's Lily is probably best planted in this country where the flowers may receive nearly if not quite all the sunshine, as it blooms late in the season, and the buds are often chary of opening when growing in the shade.

This is one of the few Japanese Lilies that has not answered more or less readily to the call of the gardener, and, do what one will, there seems little hope of ever having *L. Leichtlinii* so fine in our gardens as the species appears in nature.

Though classed as a Martagon, there is little of the Turk's Cap about the beautiful, citron-coloured flowers with their irregular outlines and purple spots, three or four of them borne on a slender stem usually less than a yard high, the



whole conveying an indefinable impression that one has to do with a plant of rare quality.

As to the cultivation, Leichtlin himself has left it on record that : "*Lilium Leichtlinii* requires a little more attention than her sisters of Japan, and does not bear potting, because it is her nature to strike out underground roots which can only expand and grow and develop in perfect liberty ; as she loves 'coolth' and not much dryness, one must take care that the soil in which she is planted gets only a little sun ; on which account one plants her by preference in Rhododendron beds ; with regard to the soil, good English sandy peat should be used, and take care that the water can drain off properly. In her fatherland she is found only in the woods, and there but rarely. The earth in which you plant her must not be sieved but torn into little pieces with the hands, and then the coarse and the fine used together."

To this may be added that the Rhododendrons must, of course, be dwarf, and that many other shrubs will do as well, Leichtlin's object being to protect the ground about the stem-roots from becoming parched. The bulbs are about the size of a small Tangerine orange, and may be planted about 8 inches deep, never in soil containing lime, and invariably with sharp drainage.

**L. longiflorum.**—Forced under glass and sold in florists' shops by thousands, every one is familiar with this most beautiful Lily which, while grown in many gardens, belongs to a large order of plants hovering on the edge of that bottomless pit into which every year are consigned so many of the gardeners' hopes along with scores of good things labelled "Hardy only in favoured gardens."

As a matter of fact, those who succeed with the Cali-



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fornian Lilies should be able to grow *L. longiflorum*, or the "Gun Lily" as it is called in Japan on account of the great length of the flower trumpet. The main considerations are drainage, protection of the bulb from excessive cold and of the young stem-growth against spring frosts, cold winds, and snowstorms. The first is easily managed by planting the bulbs in free soil on an inverted pot, while damage by cold to either bulb or stem is provided against by planting the Lily in a thick, dwarf, evergreen undergrowth: in hard weather the ground under the sheltering shrubs should be well covered with leaves.

If these points are attended to and general care exercised, the Lily will flower in the open, though not as a rule in such brave fashion as when grown in the greenhouse.

Of the many varieties *L. l. giganteum* is stronger than most, but the bulb has an exasperating trick of splitting up into several smaller bulbs just when you think the Lily has arrived at the flowering stage. Both *L. l. Takesima* and *L. l. Wilsonii* are good plants, the former more or less approaching *L. Brownii* in the dark colouring of the exterior of the trumpet, and the latter a dwarfer form with enormous flowers, sometimes as much as 5 inches across, and very beautiful: it is, too, more hardy than most.

Other sorts are *L. l. Harrisii*, the cultivation of which in Bermuda has reached enormous proportions, bringing in its train, as so often happens, a diseased condition of the bulbs which has of late years reached such a point that, unless the growers put their houses in order, the industry must inevitably be ruined.

Indeed, fresh and healthy stocks of this Lily are being raised in South Africa and elsewhere, and must soon take the place of the plants grown in Bermuda. Another beau-



tiful variety has white margins to the leaves, and is known as *foliis albo-marginatis*.

But the best of all is the form sent to the author some years ago by Mr. Alfred Unger of Yokohama as var. *Liukiuensis* from Amami Oshima, one of the group of Liukiu islands south of Kiushiu, and which is identical with the Lily the Japanese are beginning to export in large quantities as *L. l. formosanum*. It was collected for Messrs. Jas. Veitch and Sons as far back as 1880, but for some reason has not been cultivated commercially until recently.

The Liukiu islands are between 24' and 23' of north latitude; frost and snow are unknown there, and it would not be reasonable to expect any plant coming thence to be hardy; but this Lily is cultivated, so Mr. Unger informs the author, in the neighbourhood of Tokyo and Yokohama, where night frosts are frequent in winter, and, moreover, it has proved hardy in the author's garden for the last three winters without any protection. It is almost evergreen, and it evidently has a splendid constitution which has not yet been undermined by the Japanese methods of cultivation, though, if they grow it in their nurseries where *L. auratum* is grown, there seems but faint hope that the bulbs can escape the fungus disease to which cultivated Japanese bulbs are prone. The variety increases rapidly at the bulb, ripens seed freely, and this germinates quickly. It is in every way a fine modern plant.

Though *L. longiflorum* is cultivated extensively in Japan, it is not known positively ever to have been a wild plant of that country, but is known to be indigenous to certain parts of China: more than one of the Lilies already reported from Western China appear to be intermediate between *L. longiflorum* and *L. Brownii*, and it would occasion no



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great surprise if it transpires that that wonderfully prolific country is the natural home of *L. longiflorum*.

*L. longiflorum* is best planted 9 or 10 inches deep in full exposure in a free, well-drained soil ; it may be grown in ground containing lime, but it is best in leafy soil which is free from lime.

***L. maritimum*.**—That *L. maritimum* is a fickle jade none who grows it will deny, and a consideration of the conditions under which it flourishes on the Pacific coast may go some way to explain why it is so many fail with this charming Lily.

According to Purdy, *L. maritimum* grows on the coast-line of North-West California, never far inland ; in that part of the world the climate provides abundant winter rains and frequent summer fogs, and the Maritime Lily is to be found at its best in peat-bogs where the fog often hides the sun for weeks in the summer and the moisture drips from everything.

Though sharing with *L. Roezlii* the distinction of being a true bog Lily, this does not of course mean that the bulb itself is in the bog—for no true Lily will stand stagnant moisture—but that the seed has dropped and germinated on some hummock well above water-level, where the bulb may be comparatively dry, while the roots can suck up all the water they need.

In his wildest dreams the grower of Lilies cannot hope to have *L. maritimum* 5 or 6 feet high and with a dozen or more flowers, as in these bogs of the Pacific coast, and if in the ordinary way he can coax it into growing a yard high with five or six of its semi-drooping, little crimson bells, he may consider himself lucky.

Those whose gardens include a peat-bog may be more successful than most with *L. maritimum*, and others will



be well advised to try this captivating little Lily in places where *L. Parryi* succeeds, doing their best to keep the sub-soil moist and the top dry.

The bulbs, which are small, may be planted 6 inches deep, and they should be protected from frost by some dwarf evergreen overgrowth.

**L. Maximowiczii** (see Plate V).—Though usually considered a variety of the Tiger Lily and often referred to as *L. pseudo-tigrinum*, there seem good reasons, into which it is not necessary to enter here, for regarding this Lily as a natural hybrid between *L. Leichtlinii* and *L. tigrinum*; the flower is nothing but a red *Leichtlinii*, and indeed the plant is sold as such by the Japanese merchants.

Taking it all round, it may fairly be described as a fine Lily of slender and graceful growth, though rather doubtful constitution. It is easy to grow, but not to keep—a very different thing—and should be planted 8 inches deep in woodland soil without a trace of lime in it; it likes a little rest from the sun. The author has no record of *L. Maximowiczii* ripening seed in this country. Slugs are very partial to this Lily.

In Elwes' Monograph this Lily has three varieties assigned to it—var. *Bakeri*, var. *Regelii*, and *pseudo-tigrinum*—but these are not apparently in cultivation in English gardens.

**L. occidentale** is described by Purdy as a brilliant Lily with the habit of *L. maritimum* but with the flowers more revolute than in that species. Like *L. maritimum* it is a Lily of the Californian coast, and is found growing further north than the other. According to Purdy, the bulbs of each Lily are identical, and further consideration may perhaps show that the two are geographical varieties of one species.



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**L. Parryi** (see Plate IV).—"A noble Lily, native of the high mountains of Southern California and of Arizona, where at 6000 to 10,000 feet it grows under exactly the same conditions as *L. parvum* is found farther north : at the higher altitudes it is a dwarfed plant a foot or two high and one or two flowered, with a small bulb ; there it is in granitic sand mixed with leaf-mould in moist flats or along the cold streams.

"Lower down it is confined to the banks of large streams of rich, moist flats ; it is at its best where the stream has thrown up a deep alluvial deposit of sand, silt, grit, leaves, and charcoal, where it develops into a noble plant 5 or 6 feet high and is many-flowered." (Purdy.)

Those who have seen this Lily luxuriating in the garden of some tireless enthusiast know well that Purdy does not exaggerate when he speaks of *L. Parryi* as a noble plant, for such in truth it is, in cultivation occasionally rising to splendours undreamt of in its native hills.

In *The Garden* of Nov. 17, 1900, there is an account of a specimen in the garden of Capt. Savile Reid at Yalding, which bore no fewer than thirty-nine blooms on a stem 6 feet high, and the fact that Capt. Reid has since lost the plant need not deter others from trying to follow his example, for what is possible in one case is so in many.

If Purdy's account of the conditions under which *L. Parryi* grows in nature is read carefully, it will help growers to a right understanding of the requirements of the plant, the chief essential being a very porous but rich soil with moisture below the bulb, and very sharp drainage.

What fisherman amongst us could not go, in his mind's



eye, straight to one of his favourite streams in the North or West Country, and there in some little bay or sheltered bend, thrown up by countless floods and well above ordinary stream level, show you a bank of the soil described so clearly by Mr. Purdy ?

Few growers of Lilies ever seem to be blessed with exactly the soil they need for all their plants, and in nine cases out of ten it will be necessary for the man who would succeed with *L. Parryi* to make special preparations for it. The Lily will probably fail when the summer is either exceptionally dry or the winter very wet, unless the grower can get water to the subsoil in one or other of the several ways which will no doubt occur to him, and at the same time arrange for drainage for the bulb ; if both these important points are attended to all should go well.

Imported bulbs of *L. Parryi* are very liable to decay, and, like imported Japanese bulbs, should be potted up for the first season and not put into the ground till they have been proved to be sound and well rooted.

*L. Parryi* usually ripens seed, and though it occasionally lies dormant for a season, seed may usually be relied upon to germinate the second year.

The climate of southern California is a good deal hotter than ours and has no winter ; this no doubt is the reason why *L. Parryi* will not bear frost, and it is well to plant the bulbs about 8 inches deep, taking care to keep off unusual cold in winter. The sweetly fragrant flowers are variable in colour, the variations being very much the same as in *L. monadelphum*. *L. Parryi* seems to do best in this country if planted in full sun, the ground about the roots being carefully shaded.

**L. polyphyllum.**—Though reported as in cultivation



now and again, and at one time grown by Wilson, *L. polyphyllum* is almost a stranger to the gardens of Great Britain, and seems likely to remain so till some enthusiast, with more success than most in raising seedlings, is in a position to distribute home-raised bulbs. It is distinct in bulb and flower from any other Lily known to botanists, and is the only Martagon so far reported in the Himalayas.

Though reflexed, the flowers are not true Turk's Caps, the perianth being longer and more tubular than in any other Martagon; the colour is a creamy-white with a faint suspicion of yellow, beautifully besprinkled with narrow, linear dots of purple colour. The bulb is distinct, and once seen cannot be confused with any other; it may roughly be described as a very elongated *tenuifolium* of small diameter.

Having lost his bulbs more than once, the author is not in a position to offer any remarks on the cultivation of *L. polyphyllum* in gardens, beyond observing that a deep bed of sweet, sandy humus overlying well-drained, stony ground seems likely to suit it better than anything else.

**L. rubellum.**—It is barely twelve years since *L. rubellum* first made its bow to a delighted world of horticulturists, and, by its more accommodating ways and obliging habit of ripening seed profusely, put heart into the many to whom its prototype, *L. japonicum*, had been such a trial of skill and patience.

Though one hears of rumours of *L. rubellum* having become established here and there, it cannot in truth be said to be in any sense an easy Lily to keep, and its constitution is hardly sufficiently strong to enable one to say it is ever likely to become really acclimatised in England.



*L. rubellum* comes from the province of Iwashiro in the northern part of the main island of Nippon ; it grows there in half-shady places under trees and shrubs, coming up out of the grasses, as do most of the woodland Lilies of Japan. The soil in which it grows is a rather stiff, reddish loam inclining to clay overlaid with humus and with very sharp natural drainage ; winter frosts are very severe in that country, but *rubellum* takes no more account of cold than do most of the Japanese species.

The cultural directions given by nurserymen and others for this Lily vary to such an extraordinary degree that the amateur may well be excused if he feels some embarrassment in deciding whose advice he may best follow, and ends up by experimenting for himself ; and if, instead of using imported bulbs, he is able to start his experiment with those grown in this country from seed, his battle with this rather capricious Lily will be half won almost before it has begun, and for the following reason.

*L. rubellum* is one of the first Lilies to flower in Japan, and blooms in May ; in due course the bulbs are harvested and are ready for export by the end of July ; yet in the ordinary way they seldom reach England till about Christmas time, having to wait until the general season for exporting Lilies arrives.

The result is that a Lily with none too strong a constitution, and which ought to be in the ground at the beginning of September so that it may at least have the opportunity of sending out roots and making itself as comfortable as possible before winter begins in earnest, has to bear an enforced resting time of at least four months more than it has in Nature ; and as if that were not enough, the arrival in England of *L. rubellum* is timed so that it



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has to be planted at the worst possible season of the year when the earth is in its coldest and most inhospitable condition.

Is it to be wondered at that, out of the many bulbs imported, only a few make a half-hearted attempt to show how much better they might be under more favourable circumstances?

*L. rubellum* seeds so freely that there is no difficulty in raising a stock, and assuming that the grower has a supply of seedlings of a size suitable for planting out, he will be well advised to proceed as he does in the case of *L. speciosum*, though paying even greater attention to the drainage of the bulb, and giving *L. rubellum* more in the way of shade to temper the heat of the June sun to the delicate flower.

If for any reason he cannot obtain home-grown bulbs and has to employ those sent from Japan, let him first pot them up for a season, as advised in the case of *L. auratum*.

Usually seen about 2½ feet high and with one or two blooms, *L. rubellum* is capable of greater things, and when well grown it will stand more than a yard high, in habit not unlike a miniature *auratum*, and proudly bearing half-a-dozen of the lovely pink trumpets, almost more than the slender stem can carry without support.

***L. sulphureum*.**—This is one of four species known in Burma, where it is found in the Shan States on the borders of China; it is the only one of the four—*L. sulphureum*, *L. Lowii*, *L. nepalense*, and *L. primulinum*—which at present can lay any claim to consideration as a hardy plant in England, though it is possible that the *L. Lowii* and *L. nepalense* found by Henry at elevations of 5000–7000 feet



**PLATE VIII**

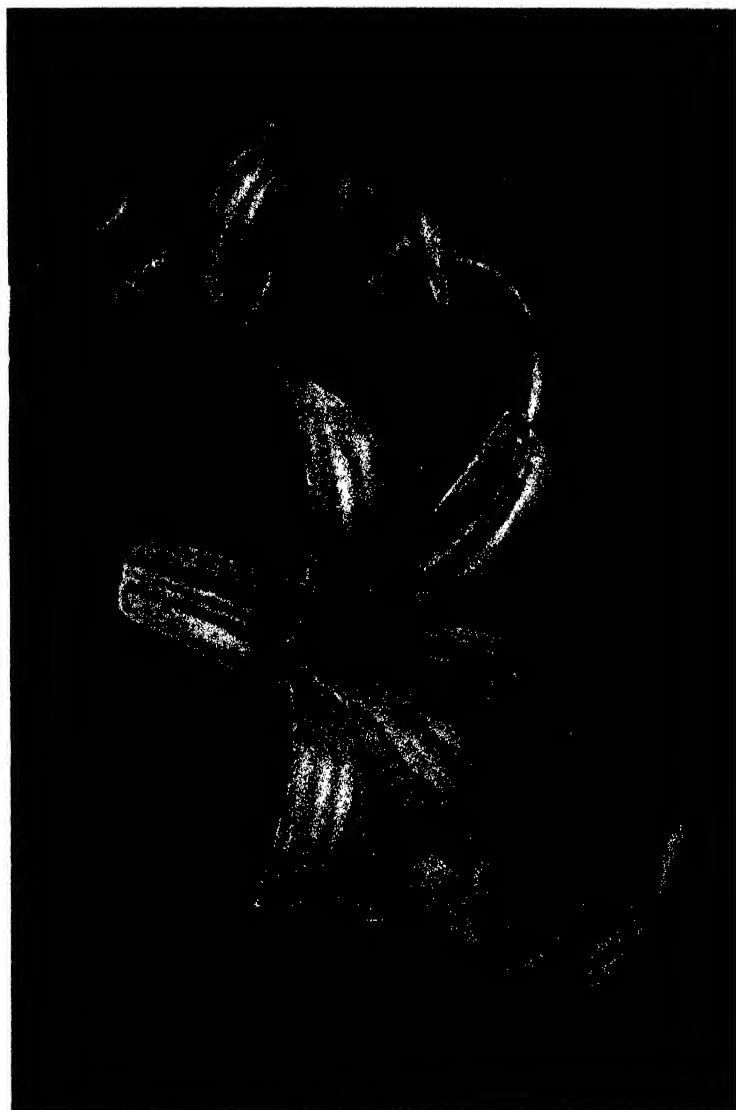
**L. PARRYI**

(See p. 98.)















near Mengtse, close to the frontier of Tonkin, may eventually prove tougher than their Burmese prototypes, and as hardy in our gardens as *L. leucanthum* from the same region.

Like many plants from that part of the world, *L. sulphureum* seems to grow at its best in gardens in a deep leaf-mould with ample moisture below the bulb. It is almost the last of the Lilies to flower out-of-doors, and for that reason should be given full exposure to the sun, among shrubs of medium growth, such, for instance, as *Cistus ladaniferus*, *Cornus Kousa*, or *Styrax japonica*, through which the stems can push their way; for *L. sulphureum* will often grow at least a couple of yards high, and, if not supported, the weight of the three or four immense, white, gold-dusted trumpets, larger than *L. longiflorum* and borne in an umbel on the tip of the stem, is almost more than it can bear, especially if caught by a gust of wind or a heavy thunder shower. The bulbs may be planted 9 inches deep.

*L. sulphureum* is easily propagated by means of the axillary bulbils with which the stems are usually plentifully endowed, and which should be removed and grown on separately; it has much in common with *L. leucanthum*.

**L. Wallichianum.**—Wallich's Lily is found in the Kumaon district of the Himalayas, where it grows in deep decayed vegetable soil overlying porous stony ground on the slopes of hot, damp valleys, rearing its fine, tall stem out of a dense undergrowth into the full blaze of the sun.

It is often shrouded in dense mists for days together, and as the temperature of these Himalayan valleys is from 120° to 130° Fahr., it is doubtful if this Lily can ever



become acclimatised in Great Britain, for while the bulb has probably nothing to fear in the way of frost, the absence of the almost tropical moist summer heat of the Himalayas must be a sore trial, especially to a Lily which flowers so late as *L. Wallichianum*. It is probable that the bulbs seldom if ever ripen properly in gardens, and though not so tender as some, this Lily is best grown under glass.

The bulbs are a deep brown colour, and may always be distinguished by the curiously serrated edges of the scales.

**L. Washingtonianum.**—By introducing this magnificent Lily to cultivation, Leichtlin has earned the undying gratitude of generations of Lily lovers; would that at the same time he had given them the key to its successful cultivation in English gardens, for then their debt to him would have been all the greater.

In one form or another scattered over nearly the whole of California and Oregon, in some places growing at an elevation of seven or eight thousand feet and in others no more than as many hundreds, even here and there found in cornfields, *L. Washingtonianum* ought, one would think, to thrive in some parts of Great Britain; and yet how seldom it is seen doing really well.

The fact seems to be that, though not exactly a tender Lily in the sense that some of the sub-tropical species of Burma are, *L. Washingtonianum* is a little less than hardy and needs a good deal more coddling than most Californian Lilies; for cold is not to its liking, and frost is deadly. For this reason it is essential that the bulbs should be planted deep down—10 inches is none too much—and even this protection should be supplemented in hard winters by a thick covering of leaves.

Again, one cannot avoid the conclusion that moisture,



and all the troubles the absence or presence of it in abnormal quantities brings in its train, has a great deal to do with the Englishman's difficulties with *L. Washingtonianum*, and probably it would be seen more often in gardens if winter rains were kept off the beds in which it is grown.

The bulbs are unusual among Lilies in that they are made up of long, loose, leaf-like scales, each separate from the other and attached at the base to a rhizomatous root; and though sometimes very large, have a curiously loose feeling to the hands—very different to the hard and plump bulb of *L. auratum*.

To succeed with *L. Washingtonianum* it is advisable to grow it in gravel in which there is a good sprinkling of leaf-mould and charcoal and a little loam, and though one can never hope to see in our gardens plants rivalling those of the Californian mountains, as high as a man and with a truss of twenty-five to thirty blooms, one may have this Lily quite fine enough to realise what a beauty it is.

The blooms, in fragrance and in shape akin to *L. Parryi*, are a pure white with purple-dotted throat.

According to Dr. Kellogg, the bulbs of the wild Lily are usually found at a depth of a foot to 18 inches, where, like some of the bulbous plants of the Transvaal, they are independent of any drought or cold Nature is likely to impose on her children.

The practice, so often advocated in this book, of raising Lilies from seed or scales is of especial advantage in the case of *L. Washingtonianum*, because the wild bulbs are particularly impatient of disturbance and are unusually difficult to obtain in sound condition; moreover, home-raised seedling Lilies certainly seem more robust than those collected in California.



Of several varieties, *L. purpureum* is much easier to manage than the type, and may be successfully grown in soil and situations that suit *L. Parryi*, the bulbs being planted rather deeper. When the flowers open they are white, as in the typical plant, but before long gradually change colour till many of them take on a purple hue.

*L. rubescens*, another and distinct form, is almost as difficult to manage as *L. Washingtonianum*, but, like all good things, is well worth battling with ; for one may go a long way before seeing anything more beautiful than one of its slender stems moving gently in the breeze and topped by a raceme of seven or eight of the semi-erect flowers, deliciously fragrant and ringing the changes in colour from pure white to a rich, plum colour. Purdy tells us he has seen *L. rubescens* 12 feet high, but nothing approaching this need be expected in England.

## CHAPTER XV

### LILIES NOT IN CULTIVATION

THE number of Lilies not in cultivation, even in the gardens of enthusiasts, is considerable, and in most cases their absence may be ascribed to the difficulty of obtaining either bulbs or seed of the species concerned.

It will be noticed that most of the species in the following list come from Western China, and though most of them were reported many years ago, only a very few have found their way as yet into commerce : *L. Henryi* is probably the only Lily from that quarter of the globe which is at all common, for Henry's Ichang type of *L. Brownii* is not yet in general cultivation.



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*L. Alexandræ*, a lovely form of *L. japonicum* from the islands south of Japan. Bulbs occasionally find their way to this country.

*L. Bakeri*, a "Purdy" Lily from Southern British Columbia, in the way of *L. columbianum*.

*L. Brownii chloraster* and *L. B. platyphyllum* are two Western Chinese forms differing but slightly from the type.

*L. Davidii*, known only by the figure in the Monograph of Elwes, which was prepared from a dried specimen he found in the collection of the Abbé David; this dainty Lily is obviously one of the most beautiful of the genus. It was discovered by David in the mountainous region on the borders of Tibet and China, and is quite distinct from any other species.

*L. Delavayi*, found by the Abbé Delavay in Yunnan, is a slender Archelirion and the only red-flowered Lily as yet reported in Western China.

*L. Duchartrei*, recorded by the Abbé David in Eastern Tibet, is a white, red-spotted Martagon in the way of *L. polyphyllum*.

*L. Fargesii*, a dwarf yellow Martagon from Szechuen, was collected by Père Farges.

*L. formosum*, one of the Szechuen Lilies, is very near to *L. Brownii*, but with an all-white trumpet flower.

*L. Jankæ* is a Transylvanian Lily allied to *L. pyrenaicum*.

*L. lankongense*, another of Delavay's finds in Yunnan, is a dwarf Martagon with black-spotted purple flowers.

*L. lophophorum*, of Franchet, is described by Forrest as a Lily of about a foot in height with nodding, rich, canary-yellow blooms. He found it in grassy openings in forests and in open mountain meadows on the Lichiang range in N.W. Yunnan.



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*L. mirabile*, an addition to the small *Cardiocrinum* section, hails from Szechuen, and is near to *L. cordifolium*.

*L. Miquelianum* is a rare Japanese Lily described by Makino as a glorified *L. medeoloides*.

*L. nitidum* is a Californian Lily best described as a yellow *L. maritimum*.

*L. occidentale*, of Purdy, is a Californian Lily: see page 97.

*L. ochraceum*, found by Delavay in the mountains of Yunnan, is a yellow Martagon of medium stature, apparently near to the European *L. monadelphum*.

*L. oxypetalum*, a tiny Himalayan Lily, which flowered at Kew as long ago as 1853, is unique among Lilies in the purple colour of the flowers.

*L. papilliferum* may be described as a dwarf *L. Maximowiczii* from Yunnan.

*L. Parkmannii*, a hybrid between *L. auratum* and *L. speciosum*, was raised by Parkman of Massachusetts in 1864, and is possibly the most gorgeous Lily of all; it is now probably lost to cultivation.

*L. primulinum* is one of the four Burmese species, and is very like *L. neilgherrense*.

*L. Rosthernii* is a Martagon from Szechuen.

*L. taliense*, a tall-growing Martagon, intermediate between *L. Martagon* and *L. polyphyllum*, comes from Yunnan.

*L. Warei*, a Californian Lily, is regarded by Purdy as a transitional form between *L. Parryi* and *L. pardalinum*.

*L. yunnanense* is the only pink-flowered Lily so far reported from Western China; it was found by Delavay in Yunnan.



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 Max Leichtlin.  
 Carl Purdy.  
 A. Unger.

Those who are sufficiently interested in the subject to study the literature bearing on Lilies will find that the Monograph of Elwes completely covers the ground up to the date of publication (1880).



## APPENDIX

Species.	Variety.	Subgroup.	Place of Origin.	Remarks.
— auratum.	Alexandræ. — macranthum. pictum.	Eulirion. Archelirion.	Liukiu Islands, Japan.	A variety of japonicum. Syn. platyphyllum.
"	"	"	"	"
"	"	"	"	"
"	rubro-vittatum. Virginalæ.	"	"	"
avenaceum. Bakeri.	— —	Martagon.	China.	Syn. Wittei. Possibly syn. L. medeoloides. Not in cultivation.
Bakerianum.	—	"	California.	"
—	Batemannizæ. Berensii.	Eulirion. Martagon.	Burma. Japan. Garden.	Classed at Kew as a form of elegans. A reputed hybrid between testaceum and chalcidonicum.
—	Bloomerianum.	"	California.	A variety of Humboldtii.
Bolanderi. Brownii.	— —	" Eulirion.	" China.	"
"	chloraster.	"	"	Not in cultivation.
"	platyphyllum.	"	"	"
"	leucanthum. odorum.	"	"	"
bulbiferum.	— Burbankii.	Isolirion. Martagon.	Japan. Europe. Garden.	Syn. japonicum colchesterense. Reputed hybrid between pardalinum and Washingtonianum.
—	Buschianum.	Isolirion.	Japan.	Variety of concolor.
—	californicum.	Martagon.	California. Japan and China. N. America.	Variety of pardalinum.
callosum.	—	"	"	"
canadense.	flavum. — rubrum.	" "	"	"
"	—	"	"	"
candidum.	foliis aureo- marginatum.	Eulirion.	Europe. Garden.	"
"	—	"	"	"
"	flore pleno.	"	"	"
"	peregrinum.	"	"	"
"	striatum.	"	"	"
carolinianum.	—	Martagon.	Southern States of " "	"



Names of plants.	Localities.	Uses.	Remarks.
Catesbæi.	—	Isolirion.	Carolina.
chalconicum.	Cattanie.	Martagon.	Europe.
"	—	"	Islands.
colchicum.	excelsum.	"	"
columbianum.	—	"	Europe.
concolor.	—	Isolirion.	Oregon.
"	Buschianum.	"	China.
"	corridon.	"	Manchuria.
"	Parthenœon.	"	Japan.
"	pulchellum.	"	Manchuria.
"	sinicum.	—	"
cordifolium.	—	Cardiocrinum.	China.
—	Glehnii.	"	Japan.
croceum.	—	Isolirion.	Europe.
"	Chaixii.	Martagon.	"
—	dalhansonii.	—	Garden.
Davidii.	—	Isolirion.	Tibet.
davuricum	—	—	Siberia.
(umbellatum).	—	—	Garden.
"	atrosanguineum.	"	"
"	aurantiacum.	"	"
"	Cloth of Gold.	"	"
"	erectum.	"	"
"	grandiflorum.	"	"
"	incomparabile.	"	"
"	sensation.	"	"
"	superbum.	"	"
Delavayi.	—	Archelirion.	Yunnan.
Duchartreii.	—	Martagon.	Japan.
elegans.	—	Isolirion.	Garden.
"	Alice Wilson.	"	"
"	alutaceum.	"	"
"	atrosanguineum.	"	"
"	Batemannii.	"	Japan.
"	Horsmannii.	"	Garden.
"	Orange Queen.	"	"
"	van Houttei.	"	"

For others, see bulb catalogues.  
Not in cultivation.

" "



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Species.	Variety.	Subgenus.	Place of Origin.	Remarks.
<i>elegans</i> .	<i>venustum</i> .	Isolirion.	Garden.	
" "	Wallacii.	"	Japan.	For other forms, see bulb catalogues.
<i>Fargesii</i> .	Wilsonii.	Martagon.	"	Not in cultivation.
<i>formosum</i> .	"	Eulirion.	Szechuen.	"
<i>giganteum</i> .	"	Cardiocrinum.	"	"
—	Golden Gleam.	Martagon.	Himalayas and Western China.	A hybrid between <i>tenuifolium</i> and <i>Martagon album</i> .
<i>Grayi</i> .	—	"	U.S.A.	
<i>Hansonii</i> .	—	"	Japan.	
—	Harrisii.	Eulirion.	Garden.	Syn. <i>longiflorum eximium</i> .
<i>Heldreichii</i> .	—	Martagon.	Greece.	
<i>Henryi</i> .	—	Archelirion.	China.	
<i>Humboldtii</i> .	—	Martagon.	California.	
"	<i>magnificum</i> .	"	"	
<i>Isabellinum</i> .	Bloomerianum.	"	"	
<i>Jankæ</i> .	—	"	Garden.	Syn. <i>testaceum</i> .
<i>japonicum</i> .	—	"	Transylvania.	Kramer's Lily.
"	Alexandra.	Eulirion.	Japan.	
"	colchesterense.	"	"	Syn. <i>Brownii odorum</i> .
<i>lophophorum</i> .	—	"	Yunnan.	Not in cultivation.
Kelloggii.	—	Martagon.	California.	Hybrid between <i>Henryi</i> and <i>Brownii chloraster</i> .
—	<i>kewense</i> .	Archelirion.	Garden.	The proper name for this plant is <i>japonicum</i> .
<i>Krameri</i> .	—	Eulirion.	Japan.	Not in cultivation.
<i>Lankongense</i> .	—	Martagon.	Yunnan.	
<i>Leichtlinii</i> .	—	"	Japan.	
<i>longiflorum</i> .	—	Eulirion.	China.	
"	<i>eximium</i> .	"	Garden.	
"	<i>formosanum</i> .	"	Liukiu Islands.	
"	<i>foliis albo marginatum</i> .	"	Garden.	
"	<i>giganteum</i> .	"	"	
"	<i>Takesima</i> .	"	"	
"	Wilsonii.	"	"	Syn. <i>Harrisii</i> , the Bermuda Lily.



Marhan.	Martagon.	Garden.	A hybrid between Martagon and Hansonii.
maritimum.	"	California.	
Martagon.	"	Europe.	
"	"	Garden.	
album.	"	"	
album flore plenum.	"	Dalmatia.	A form of dalmaticum.
Cattanie.	"	Japan.	Syn. pseudo-tigrinum.
dalmaticum.	"	"	Not in cultivation.
"	"	"	"
Maximowiczii.	"	Szechuen.	Not hardy.
meteloides.	"	Caucasus.	"
Miquelianum.	"	Yunnan and Japan.	"
mirabile.	"	Neigh cherry Hills.	"
monadelphum.	"	Burma.	Not hardy.
myriophyllum.	"	California.	"
neigherrense.	"	"	Not in cultivation.
nepalense.	"	Yunnan.	"
nitidum.	"	N.W. Himalayas.	"
occidentale.	"	Yunnan.	"
oxraceum.	"	California.	"
oxypetalum.	"	"	"
papilliferum.	"	"	"
pardalinum.	"	"	"
"	"	"	"
angustifolium.	"	"	"
Bourgei.	"	"	"
californicum.	"	"	"
luteum.	"	"	"
Roezii.	"	"	"
Warei.	"	"	"
Parkmanii.	"	"	"
Parryi.	Archelirion.	Garden.	Possibly a transitional form between pardalinum and Parryi.
parviflorum.	Eulirion.	California.	Hybrid between auratum and speciosum.
parvum.	Martagon.	"	
philadelphicum.	"	"	
Philippinense.	Isolirion.	Canada and U.S.A.	
polyphyllum.	Eulirion.	Philippine Islands.	
pomponium.	Martagon.	Himalayas.	
primulinum.	"	Italy.	
pyrenaicum.	Eulirion.	Burma.	Not in cultivation and not hardy.
"	Martagon.	Spain.	
Roezii.	"	California.	Variety of pardalinum.
"	"	Szechuen.	
Rosthernii.	"	"	



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Species.	Variety.	Subgenus.	Place of Origin.	Remarks.
rubellum.	—	Eulirion.	Japan.	Variety of Washingtonianum. Syn. concolor.
sinicum.	—	Isolirion.	California.	
speciosum.	—	Archelirion.	China.	
"	album.	"	Korea, China and Japan.	
"	Kraetzeri.	"	Garden.	
"	Melpomene.	"	Japan.	Syn. Wallichianum superbum.
"	macranthum.	"	Garden.	
"	roseum.	"	Japan.	
"	rubrum magnificum.	"	Garden.	
"	—	"	Japan.	
sulphureum.	—	Eulirion.	Burma.	Variety of monadelphum.
superbum.	—	Martagon.	U.S.A.	
sutchuenense.	—	"	Eastern China.	
—	Szovitzianum.	"	Europe.	
taliense.	—	"	Yunnan.	
tenuifolium.	—	Eulirion.	Japan.	Var. of longiflorum.
Thunbergianum.	—	Martagon.	Siberia.	
tigrinum.	—	Archelirion.	"	
"	—	"	China and Japan.	
"	—	"	Garden.	
"	Fortunei.	"	Japan.	Syn. splendens. Syn. Leopoldii. A hybrid. For varieties, see davuricum.
"	Leopoldii.	"	Garden.	
"	splendens.	"	Siberia.	
"	umbellatum.	Isolirion.	"	
"	Wallacei.	"	Japan.	
Wallichianum.	—	Eulirion.	Himalayas.	Syn. sulphureum.
Wallichianum subperbum.	—	"	Burma.	
Warei.	—	"	California.	
Washingtonianum.	—	"	"	
—	purpureum.	"	"	
—	Wittei.	Archelirion.	Japan.	Considered by Purdy as transitional form of L. Parryi.
Yunnanense.	—	"	Yunnan.	
				Var. of auratum, and syn. Virginale. Not in cultivation.

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